Address in Medicine

ON

MEDICAL PROGRESS IN THE PAST QUARTER OF A CENTURY.

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MR. PRESIDENT AND GENTLEMEN,—When this Association last met in Edinburgh the Address in Medicine was delivered by the accomplished and universally beloved physician, Dr. Warburton Begbie, and notwithstanding the lapse of time I can still recall—and there are others here also able to recall—the thesis which formed the subject of the address, expressed in the inquiry, Has the practice of medicine made a single step since the time of Hippocrates? In dealing with this thesis Dr. Begbie described the history of medicine from its beginnings, as only could be done by one who had not only carefully studied the writings of the fathers of medicine, but had also made himself familiar with the work of their successors. The doctrines regarding the nature of disease, which successively replaced each other during the twenty-three centuries dealt with, were clearly described, and, as was to be expected from the practical physician, he fully discussed the bearings of these doctrines upon treatment and pointed to the more conspicuous acquisitions in the healing art which had enriched practical medicine. He had the opportunity of showing how greatly medical doctrine had been transformed by Harvey's discovery of the circulation of the blood; how the diagnosis of pulmonary and cardiac disease had received an extension and previously unknown definition, from Laennec's discovery of auscultation; how the memorable discoveries and courageous applications of nitrous oxide, ether, and chloroform by Horace Wells, Morton, and Simpson had deprived the knife of the surgeon and the reproduction of animal life of much of their former terrors and anxieties; and how by that vaccination, which will ever be associated with the name of Jenner—the first and still unsurpassed means of restricting the ravages of a fatal infectious disease—an almost incalculable benefit had been conferred upon the human race. From his elaborate survey of the history of medicine he concluded that no general doctrine—chemical, physical, humoral, or physiological—had been propounded which satisfactorily explained the nature and production of disease; that therapeutic advancement had been obtained, chiefly by the observation of patients, by adhesion to the classic method of rational empiricism; and that by this method such valuable accessions to the means of treating disease had been gained as the administration of turpentine in pulmonary gangrene and bronchitic affections; of quinine in intermittent fever; of iodide of potassium in syphilitic periostitis and thoracic aneurysm; of bromide of potassium in epilepsy; and of cod-liver oil in pulmonary tubercle.

It may not be without interest to consider to-day how far, and in what directions, this great and wide subject of medicine has chiefly advanced since Dr. Begbie delivered his address. The intervening period is the relatively brief one of scarcely a quarter of a century. It has, however, been signalised by a great increase of knowledge regarding the fundamental sciences of chemistry, physiology, and morbid anatomy; by the creation of pharmacology as a science of the action of remedies; by steady advance in symptomatology and diagnosis; and, above all, by so remarkable a development in our conceptions of the nature and production of many diseases that we appear almost to have attained a position vainly sought for during centuries by our predecessors of being able to formulate a doctrine of disease founded upon the satisfactory basis of experimental demonstration, and sufficient to explain many of its forms and to already provide us with assured means and principles for its prevention and treatment. While fully acknowledging the merits of the workers in medical science and practice by whom this gratifying progress has been made it cannot be forgotten that the necessary pioneer work was undertaken amid difficulties of exploration in dark and unknown regions, and that but for this pioneer work the present generation would not have been able to reap so prolific a harvest of medical discovery. This indebtedness to our predecessors is nowhere more conspicuously shown than in the advancements that have been made in the diagnosis of disease. Observation, careful and intelligent, practised by the fathers of medicine had already constructed a nosology sufficient to distinguish the great majority of diseases, and so complete that it is doubtful if much advance could have been made if the methods in use at the commencement of this quarter of a century had alone been trusted to. The introduction, however, of physical aids to our senses and of chemical applications and methods—each rendered possible by the growth of collateral science—has placed us in a position from which we have been able to advance in accuracy of diagnosis and even in the discovery of new diseases.

MODERN ADVANCE IN ACCURACY OF DIAGNOSIS.

By the apparatus now in use for blood determinations the condition of this fluid in regard to many of its most important constituents can be exactly determined and information can be obtained valuable for treatment and previously unattainable by any perfection of intelligent observation by means of the unaided senses. The sphygmograph depicts with precision of detail changes in the pulse which are difficult to apprehend by the unaided finger even after a long apprenticeship and, above all, increases the usefulness of the physician by indicating the characters which without its use he should be trained to detect. He is thus enabled to appreciate changes which are not only of the highest value in prognosis, but are also frequently sufficient either in themselves or aided by the most superficial of further observation to justify without auscultation the diagnosis of the cardiac lesion which is present. The ophthalmoscope has increased the certainty of diagnosis of many nervous affections and toxic processes and some of the difficulties of clinical observation have been overcome by radiography, whose capabilities, however, are as yet undeveloped. By the introduction of chemical processes applied especially to the examination of the stomach contents and of the urinary and other secretions, diagnosis has also been advanced and previously unknown precision has been obtained. The agglutinated effects of the blood-serum in certain infective diseases, as typhoid, Malta and relapsing fevers, and in cholera and anthrax, upon their respective pathogenic organisms, and the application of chemical pigments to reveal the existence of the microscopically minute organisms of such diseases as pulmonary tubercle, pneumonia, and diphtheria, has removed many of the perplexities of diagnosis and rendered identification almost a mechanical art.

While by these and other means the diagnosis of diseases—a fundamental work in the art of medicine—has conspicuously advanced during the last quarter of a century, this advancement, however great, does not in itself justify any claim to a nearer approach to the realisation of the highest aims and objects of medicine. Diagnosis, for the most part, deals only with symptoms, it has no immediate concern with the true nature or course of the disease, and until this has been determined progress in treatment can only be tardy and unsatisfactory. The history of medicine has shown that the advance in these two departments has rarely, if ever, been parallel or equal. The one may reach a position of almost ideal perfection, while the other still remains in the initial stage of vague speculation. This is exemplified by the present state of knowledge of nervous diseases. Minute symptoms have been identified and have been so arranged in groups as to constitute special diseases, and thus numerous forms of disease associated with morbid lesions of parts of the spinal cord or brain have been created. The elaboration is a remarkable triumph of painstaking and skilful observation in symptomatology and in morbid anatomy. It presents a field for the training of the powers of observation and reason probably unsurpassed by any other problems in practical medicine, and the solution of these problems is undoubtedly a cause of satisfaction to the physician, as it frequently also is to the patient. To what extent, however, is the patient a gainer; to what extent is the object of diagnosis and of all medical knowledge fulfilled? It

must be admitted that the gain in most cases is disappointing. The natural course of the disease is no doubt often beneficially modified, but usually to only a slight extent, unless surgical treatment is successfully applied, which even the scientific discoveries of Ferrier and Horsley and the surgical skill of Durante, Kocher, Macewen, and others have rendered possible in relatively few cases. Whether the investigation of the condition of the patient leads to the diagnosis of acute ascending paralysis or anterior cornual degeneration, of spastic paraplegia or locomotor ataxia, of syringomyelia or bulbar paralysis, the methods of treatment are much the same; and while we may have some satisfaction in adopting measures to relieve symptoms or to protect the patient against conditions favourable to the progress of the disease, or to increase the general powers of resistance, we most frequently find ourselves in the mortifying position of being unable to cure the disease. In those cases, on the other hand, where it is possible to advance from diagnosis to the determination of the actual cause of the disease, when remedies are employed which have been proved to be curative as regards that cause, the disease, whatever be its position in the artificial nosology of nerve affections, may in many instances be arrested in its progress and may even be cured provided the affected tissues have not already undergone incurable destruction.

At the present epoch in medicine it is especially interesting to recognise that the latter gratifying results are to be obtained when there is reason to believe that the disease has been caused by a toxic substance present in the body and that according as this substance be the poison of syphilis, or of rheumatism, or of malaria is the cure effected by remedies which have been proved capable of annulling the toxic effects of these poisons. It is thereby shown that the disease is not truly a product of the structural alterations which are present, but of a hurtful substance or poison capable among other effects of producing these structural alterations. Similar facts are observed with many ordinary poisons and an association, highly significant in regard to the production of disease, is thus indicated. Many of the more common poisons produce changes in structure closely simulating the changes of disease, as the peripheral neuritis, anterior cornual degeneration, granulo-fatty degenerations, and arterial sclerosis of lead, the liver steatosis and yellow atrophy of phosphorus, and the fatty degenerations and diffuse sclerotic hyperplasia of the liver, the peripheral neuritis and the atheromatous changes in blood-vessels produced by alcohol. By such facts, acquisitions of modern pathology, it is strongly suggested that the structural changes found in many diseases may, after all, be mere manifestations, associated with other effects, of a cause which would thus assume the importance of being the essence, the *vera causa*, of the disease, and that this essence is a toxic substance. This idea is rapidly becoming the predominant doctrine of the present-day conception of disease and as investigation proceeds it is almost daily receiving support from new facts. It has been demonstrated that the body is constantly subjected to the risks of poisons produced within itself, as well as of poisons introduced into it from without. Many of the poisons produced in the body, such as the ptomaines and leucomaines, are of the chemical nature of the previously known alkaloids, and not a few of them rival the vegetable alkaloids in toxic power and reproduce their leading effects. Nervine, for instance, is lethal in minute doses and acts in many respects like pilocarpin; while muscarin finds its analogue in the active principle elaborated by poisonous fungi. The organism even in a state of health is a veritable storehouse of these toxic substances. Many of its normal constituents, such as potash salts and carbonic acid, are well-recognised poisons; many of the products of its glands, such as saliva and bile, contain toxic ingredients; many of the substances which are formed in the processes of disassimilation, and which enter such secretions as the urine and the intestinal canal, are capable of disordering health and even of endangering life; and in disorders of function, even if they amount to little more than mere disturbance of nutrition, poisons not found in the healthy body are generated and produce the symptoms of disease. By such toxic influences the symptoms of cholæmia, gout, rheumatism, uræmia, diabetic coma, stercoræmia, and probably also of chorea, sunstroke, neurasthenia, asthma, and the idiopathic anæmias receive a sufficient explanation, even although the toxic substances have not in all cases been identified. The doctrine of the toxic origin of disease has also been applied to mental affections. Auto-intoxication from poisons produced in the intestinal canal is believed to be an important factor in the causation of insanity and already neurologists, such as Nissl and Van Giesen, have expressed the opinion that the toxæmic theory is destined to clear away much of the present vagueness regarding the pathogenesis of mental disease. Further, it is not improbable that in cancer auto-intoxication by a poison generated in the cancer cells, equally with and in some instances to a greater extent than structural degenerations of invaded tissues, accounts for the symptoms and for the fatal termination—a probability which has been strengthened by the separation from cancer of a substance possessing a hyperthermic and powerfully lethal action.

TOXIC ORIGIN OF INFECTIOUS DISEASES.

The widely acting pathogenic influence of poisonous substances has, however, received its most definite and convincing support from the remarkable discoveries in bacteriology which have signalised this period. The gravity and wide prevalence of infective diseases had rendered them a subject of special study from the earliest period. Rhazes in the seventeenth century propounded the view that small-pox was essentially a fermentative disease and thus originated the doctrine of the fermentative nature of all infectious disease. Previously to this time a theory of the parasitic origin of these diseases had been propounded and its more enthusiastic supporters gave a reality to their views by such statements as that syphilis was caused by a minute worm, and measles, small-pox, and plague by infusorial animals or invisibly minute insects. With the introduction of the compound microscope the parasitic theory disappeared in this gross form of it and the fermentative theory was again adopted. It was not, however, until 1861, when Pasteur's great discovery of the nature of butyric fermentation was made public, that the sufficiency of the theory became revealed. His demonstration of the essential part played by minute living structures in the transformations which constitute the process of fermentation at length removed the process from the mysteries which had previously surrounded it, and opened up applications to the pathogenesis of infective diseases which have revolutionised medicine. He pointed out that the organisms of fermentation are similar to those which had already been discovered by Rayer and Davaine in anthrax. He subsequently demonstrated the virulent nature of the microbes of pyæmia and infectious gangrene, and following Koch's work on the cultivation outside of the body of the bacillus of anthrax he proved also that this bacillus, as well as that of cholera de poules, is able when grown in suitable media to reproduce itself almost indefinitely and to retain for many generations its power to cause the symptoms of the original disease when inoculated into animals. The way was thus opened up for important additions to the knowledge of the etiology of infective diseases, and in rapid succession the pathogenic micro-organisms of swine fever, morve, tubercle, Asiatic cholera, septicæmia, erysipelas, pneumonia, and numerous other infective diseases were discovered. The pathogenic action of the microbes was at first attributed either to mechanical obstruction of the blood-vessels, caused by their accumulation in them which resulted in asphyxia of organs essential to life; or to a biological action which enabled them to appropriate nutritive materials destined for the tissues of the body and thus to deprive these tissues of life. While in the case of a few of them both of these actions may to a slight extent explain their effects, it was subsequently proved that these effects are mainly caused by the poisons which they produce. The poisons are of complex composition; some are alkaloids and others modified proteids, and others, again, have altogether unknown chemical composition. Many of them are of extreme and almost indefinitely great activity; one milligramme, for instance, of the dry poisonous constituents of tetanus toxin is sufficient to kill a horse, or 600 million times its weight of living tissue; while the hypothermal effects of tubercle toxin are appreciable when the dry toxin, in doses of from one to two-tenths of a milligramme, is injected, representing a strong reaction on 60 millions of its weight of living human substance. Like other poisons, they also are capable of producing structural changes, exemplified in the skin eruptions produced by many infectious diseases; in the focal necrosis of peripheral nerves produced by the diphtheria poison; the fatty changes and longitudinal fibrillation of the heart muscle produced by this poison and also by that of

anthrax; the cerebro-spinal meningitis produced by the poison of influenza; the anterior cornual and muscle degenerations and the neuritis produced by the poisons of tetanus and diphtheria; the acute parenchymatous and hæmorrhagic nephritis produced by serpents' venom; and in the production of nodules in the lungs, reproducing the characteristics of pulmonary tuberculosis, by dead tubercle bacilli.

The demonstration of the toxic origin of infectious diseases has thus added greatly to the number of diseases which are caused by poisons and has thereby been largely instrumental in establishing the doctrine of the toxin origin of disease. Unlike the older doctrines of the iatro-chemists, humoralists, and physiologists, this doctrine is supported by an abundance of convincing facts; and it may confidently be anticipated that it will have an endurance which former systems of medicine have not possessed. Large numbers of disease-producing poisons are thus ever present in the body, created by the normal processes of life and abundantly produced by departures, even in themselves unimportant, from these processes. Many substances well known to have poisonous properties are intentionally introduced into the body, such as alcohol, tobacco, tea, and opium, while others, such as lead, accidentally find their way into it. The respiratory passages and intestinal canal are crowded with micro-organisms and they teem in the soil, air, and articles of food. Many of them are producers of virulent poisons and when they effect a lodgment in the body and find conditions congenial to development they proliferate with so great rapidity that a single bacterium may in twenty-four hours have multiplied itself into many millions of separate toxin-creating organisms. In these circumstances it is of interest to inquire what defence man and other animals can oppose to the disease and death-producing poisons by which they are so constantly endangered. Instances have long been known of a possession of defensive powers against the ordinary poisons, organic or inorganic. Certain animals are by hereditary endowment able to receive with impunity large quantities of poisons, which in minute quantities are hurtful to other animals, well exemplified in the enormous quantities of belladonna and opium which may be administered without injury to herbivora. It is also notorious that man and other animals may become so habituated to the action of several toxic substances that in the course of time doses greatly in excess of the minimum lethal are no longer able to cause death or even much inconvenience. Such acquired powers of defence are produced against arsenic, opium, alcohol, and tobacco, and they are also illustrated in the effects of nitrile ethers. Explanations for these exceptional powers of defence have been found in the special activity of the processes of elimination and particularly of elimination by the kidneys, whereby the quantity of poison requisite to cause injury is prevented from being present in the blood; in an unusual power of producing decomposition, probably dependent on special chemical conditions of the blood; and on the property which certain organs possess of absorbing and retaining toxic substances and of thus preventing their access to the structures on which they act, in quantity sufficient to be hurtful. In the case, further, of many organic poisons, absorption and diffusion are impeded by the walls of cells, as in the instance of the slow absorption of strychnine through the stomach walls and of many albuminoid poisons though the intestinal epidermis. These explanations, however, do not account for all the observed phenomena, and it must in the meantime be assumed that tissues may gradually become accustomed, possibly by exhaustion, to the perturbations produced by substances which modify this normal condition, so that by-and-by a tolerance is induced. Anticipating some statements which will afterwards be made, a fundamental difference exists between both congenital and acquired defence against ordinary poisons and that resulting from the action of disease toxins, venoms and such-like poisons, in so far that in the former there is not produced in the blood any substance which plays the part of a counter-poison or antitoxin. The subject has, however, gained a new importance from the remarkable facts discovered in connexion with the poisons generated by pathogenic micro-organisms and in connexion also with other poisons of very similar chemical composition, represented especially by the venom of serpents and by the vegetable products abrin and ricin.

THE PRODUCTION OF ARTIFICIAL RESISTANCE TO DISEASE.

It had long been known that many infectious diseases conferred upon those who had suffered from them a power of resistance against subsequent attacks of the same disease. After the discovery had been made—and to this I have already alluded—of the microbian origin of infective diseases, it was experimentally shown that if the microbes constituting the cause of any infective disease were inoculated into animals, not only were symptoms of the disease produced, but also that the animal, if it survived, reproduced still further the events of an infectious illness by acquiring a power of successfully resisting the morbific influence of the same microbes subsequently inoculated. It has likewise been found that each of these events could be reproduced by the filtered and therefore microbian-free solution in which the pathogenic microbes had been cultivated, and thus it was demonstrated that neither the original disease nor the subsequently acquired production was actually due to the microbe, but to toxic substances produced by it. From this position the further great advance was made that the blood-serum of protected animals, itself destitute of poisonous properties, when introduced into non-protected animals, conferred upon them a resisting power which might be so great that even large lethal doses of the virulent micro-organism and of its toxin no longer produced death or even symptoms of poisoning. These remarkable results of experiment deservedly claim much attention. They irrefutably demonstrate that infectious diseases are in their essence poisonings; they throw much light on the mystery, previously shrouded in metaphysical phrases, of the nature of the protection acquired by attacks of infectious disease or conferred by vaccination; and they have not only at once led to valuable therapeutic results, but they indicate further applications both in the prevention and treatment of disease, exceeding in their possibilities any expectations that had previously been originated by discovery in medical science. Inquiry into the nature and cause of this protection has thereby been removed from the position of speculation long occupied by it to one in which experimental methods could be pursued with some hope of solving the problems. Many of the results, however, are yet difficult to explain, and considering that new facts bearing upon them are almost daily being obtained it is not to be expected that altogether satisfactory solutions have been found or unanimity of opinion been obtained. More especially does this apply to the nature of the process whereby protection or immunisation is obtained, to the origin of the protection producing substances or antitoxins, and to the manner in which they act as curative or therapeutic agents.

As in the case of some of the ordinary poisons, mineral and vegetable, it may be admitted that a portion of the acquired protection is due to the tolerance brought about by the accustoming of the structures of the body to the action of the poison, but this tolerance could not continue for the long periods during which acquired immunity sometimes persists after the infected disease has been recovered from. It may also be admitted that pathogenic micro-organisms absorb and thus remove from the body certain constituents necessary for their growth and vitality whose removal may, to some slight extent, render the body unsuited for the further growth of these organisms; but, apart from other objections that might be advanced, it is inconceivable that this cause could operate in the bodies of animals which so rapidly change the composition of all their constituent parts and that, therefore, the substances which have been removed would not very soon be again restored to the body and thus render it vulnerable to fresh infections. The doctrine of phagocytosis, enunciated and ably and strenuously supported by Metchnikoff, in which protection is attributed to the power possessed by leucocytes of absorbing and destroying microbes, may, to a limited extent, account for the destruction of living microbes, but it probably accounts to a greater extent for their disappearance after life is extinct; while it can have but little influence upon the soluble toxins which, since the introduction of the theory of phagocytosis, have been proved to be in most cases the true cause of the disease symptom. The frequent persistency of immunity not only exemplified in the after-history of patients who have recovered from certain of the infectious diseases, but also in vaccination against small-pox, while it alone serves to disprove each explanation as yet advanced of the essential nature of acquired protection, must be taken into account in formulating explanations. The micro-organism of an infected disease introduced into the body produces the characteristic symptoms of the disease, and if the animal recover subsequent inoculations of this micro-organism no longer produce any injury. The animal has become

protected against the disease, and there is abundant clinical evidence to show that in the case of the majority of infectious diseases the immunity lasts for many years. The pathogenic organism of the same disease cultivated outside the body produces a toxin which when administered to an animal likewise reproduces the symptoms of the disease, and if the animal recover, and further quantities of the toxin are successively administered, an immunity may be acquired so great that the animal suffers but little inconvenience when 50 times a minimum lethal dose or even a larger quantity of this toxin is now administered to it. The immunity acquired in the latter case is, however, only of short duration. I do not know if the duration of it has been defined with any of the toxins of disease, except with the toxin of diphtheria, and Roux and Klein have shown that with this toxin it lasts only from 5 to 7 days. Enough at least has been done to show that it is brief when compared with the immunity produced by the microbes from which the toxins had originated, and Klein remarks that a serum which may be relied on to afford any durable protection is still a desideratum. It is also interesting to note that Monckton Copeman has found that lymph filtered so as to remove from it all solid particles, and therefore presumably all micro-organisms, can produce only a briefly lasting protection against unfiltered vaccine lymph of normal potency. In the case of the venoms of serpents—which in composition and in other important respects are analogous to the toxins of disease—the duration of immunity has, however, been defined; and experiments have shown that if an animal be protected so as to survive the minimum lethal dose of the cobra venom, the protection produced against the same dose of venom does not last longer than a few hours; and even when the process of the immunisation has been carried so far that the animal can survive four times the minimum lethal the protection against this dose of venom exists for only 30 days

The protecting substance, antitoxin or antivenine, which appears in the blood after inoculation with pathogenic microbes, or after the injection of toxins or venoms, is chemically unstable and is subject also to the general processes of elimination. Its presence in the body, even when the quantity of toxic substance to which it owes its origin is greatly above the quantity of toxin which has been elaborated in a case of infectious disease by the pathogenic organisms of that disease, is to be measured by days only; and, nevertheless, the protection produced in a patient by an infectious disease may apparently endure for a lifetime, and the immunity from small-pox gained by vaccination for at least seven years. It appears to me impossible to explain these contrasting facts on any other supposition than that in the instances of prolonged immunity successive supplies of the antitoxin of the disease, or of small-pox, must be furnished to the body during the time that protection continues. It is not possible, however, that these supplies could emanate from the pathogenic organism itself, for the life of the host would not endure were they retained in the body in their condition of original virulence. Jenner himself believed that vaccinia is a modified small-pox. The microbe of small-pox, like all other microbes, is greatly influenced by its surroundings. When transferred from man to the calf it is now known that it may gradually acquire the characteristics of vaccinia and elaborate substances which reproduce in man the protective effects of inoculation with human vaccine. The microbe of small-pox, therefore, has obviously become so modified that while it can no longer produce a virulent toxin it still retains the power of elaborating a protective antitoxin and also retains sufficient vitality to reproduce its like through many generations in the human body. Evidence pointing in the same direction had been obtained with other pathogenic microbes. Pasteur found that the microbe of fowl cholera when treated in a certain manner can have its virulence greatly lessened and if it be then injected into the tissues of fowls only slight poisoning is produced. From fowls thus treated microbes are obtained also capable of producing only slight poisoning and inoculations can be carried through a successive series of fowls with a like result. Each of these fowls had by this inoculation with a weakened or attenuated microbe become protected against the original and virulent microbe.

In the case of the pathogenic micro-organism of anthrax this great pioneer in the field of the microbian etiology of disease discovered similar facts. If grown outside of the body at a temperature of 42·5°C. for eight days this microbe could no longer produce the disease in susceptible animals, but, notwithstanding, it endowed them with a certain degree of protection against the original virulent microbe. Similar results were obtained with the microbe of hog fever and it is important to note that a duration of immunity exceeding that known to be produced by any toxin was obtained, for the protection following inoculation of the attenuated microbe lasted for at least one year. These instances are sufficient to show that immunity equally with poisoning is dependent upon a soluble substance produced by the micro-organisms; that the duration of even a high degree of immunity resulting from the introduction into the body of the immunising substance as distinguished from the microbe is only of brief duration; and, accordingly, with the existing evidence it is impossible to account for the prolonged immunity following upon the recovery from many infective diseases or from inoculation with vaccine lymph, otherwise than by assuming that so long as immunity continues the microbian sources of infective disease continue to exist in an attenuated and otherwise modified form in the protected body. Attenuation for the purposes of protection would therefore appear to be essentially a process in which the condition of life of the microbe is so altered that its capacity for manufacturing poisons is weakened or destroyed, while its disease-preventing properties are retained. Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition, while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised. The theory which I have suggested implies that long-enduring protection from infective disease cannot be obtained by the introduction into the body of either the poisonous or the immunising products of microbes—the toxins or antitoxins—but only by inoculation of such microbes as are capable in the body of assuming a non-virulent form or of microbes already converted into this form.

I would here point out that, however highly we may value the objects and successes in some important directions of the experiments of Dr. Monckton Copeman and others on the effects of glycerine upon vaccine lymph, it must not be overlooked that the powerful microcidal action of glycerine upon the contaminating organisms of this lymph may, in the course of time, weaken or even destroy the activity of the specific organism by which the long-lasting protection against small-pox is produced. In the case of some diseases it is possible that the modification of the pathogenic power of the micro-organism necessary to convert it from a poison-producing to an antidote-producing agent cannot be accomplished in the body. Thus may be explained the failure of certain diseases to protect the body from subsequent attacks of the same disease, well recognised in the instances of pneumonia, influenza, diphtheria, rheumatic fever, erysipelas, and tubercle. On the other hand, the microbes of other diseases may in small numbers, and attenuated both in virulence and in power of conferring protection, persist in the body after convalescence has been established and actually render it not only more susceptible to fresh infection, but also to a recurrence of the disease by auto-infection. Results obtained by experiments with toxin and venom support the former possibility, for owing to some as yet unexplained individual peculiarity an animal which had received a number of successive doses of toxin or venom, each considerably below the minimum lethal, instead of having thereby acquired protection, may unexpectedly exhibit serious symptoms of poisoning and may even die when it receives a dose considerably below that required to produce death in an animal which had not previously received any toxin or venom. The probability of the second event is supported by the well-known effects upon the life and pathogenic power of microbes of changes, even although slight, in the conditions to which they are subjected. A change in temperature, the addition to or removal from the fluid in which they are grown of a minute quantity of a chemical substance, may convert a non-virulent form of a pathogenic organism into a virulent form. Similar causes may outside the body also render moderately or intensely virulent a previously non-virulent microbe, and thus may be explained variations in the severity of epidemics as well as the occurrence of outbreaks of infectious disease not originated by infection from any previously existing case. The dependence of microbial existence upon the composition of nutrient

media may also partly account for the age liability, which forms so conspicuous a feature in the history of such infectious diseases as scarlet fever, measles, and whooping-cough. Further, pathogenic microbes, attenuated as to their virulence but not as to their protective power, may enter the body and render it immune by a process of accidental vaccination; and thus may be explained, without recourse to such unsatisfactory phrases as individual or racial peculiarities, well-authenticated examples known to all of us, of repeated exposure to infection without the production of disease and of the immunity enjoyed by the inhabitants of towns and districts daily subjected to the virus of typhoid fever, malaria, or yellow fever. These are not mere hypotheses unsupported by experimental data. Describing the results of his experiments on anthrax Pasteur states that when fowls are inoculated with the virulent microbes of this disease they remain well until they have been cooled down to a subnormal temperature; and in the earlier stages of the poisoning thus induced, if the temperature be again raised, the symptoms of anthrax disappear and the fowls recover. Anthrax microbes, as well as those of fowl cholera, if cultivated at a temperature between 42° and 43° C., acquire varied degrees of lethality according to the age of the culture, and the microbes of each variety of lethality can be almost indefinitely reproduced by maintaining certain conditions of cultivation. If microbes so grown as to be no longer able to produce anthrax in rabbits are first inoculated in a successive series of experiments in young, and for that reason extremely susceptible, rabbits, and if the microbes obtained from the last of the series are then inoculated into somewhat older and finally into adult rabbits, the original virulence of the microbe is found to have been regained. "The work in my laboratories," he states, "has established that pathogenic microbes are not morbid entities. They can assume various forms of physiological activity, depending on the media in which they live and multiply. As a consequence one can modify their virulence. It can be exalted or enfeebled and each state can be fixed." Impressed by the far-reaching possibilities suggested by these and other fruits of his fertile imagination it is not astonishing that the great enchanter whose divining rod of science had thus thrown a clear light on the mysteries of centuries should exclaim: "The hour has now arrived when we may enter the enchanted grotto full of priceless treasures."

THE ORIGIN OF THE PROTECTION-PRODUCING SUBSTANCES.

Passing now to consider the origin of the protection-producing substances—antitoxins or antivenins—it is important to bear in mind that the symptoms of a pathogenic disease, the toxic phenomena by which it is characterised, are, with a few doubtful exceptions, directly caused by the poisons generated by micro-organisms and not by the micro-organisms themselves. The production of microcidal agents does not, therefore, in connexion with this question require consideration, but it may be pointed out that there is evidence of the production both by toxins and by micro-organisms of substances specially unfavourable to the vitality of the micro-organisms themselves. The explanation of the production of antitoxin in the body, whether following the introduction of virulent microbes or of toxins entirely free from microbes, has generally been explained by a reaction occurring in the tissues of the body, whereby either a proliferation of leucocytes and the production by them of the protecting substances is excited or the normal cells of the body are stimulated in such a way that they secrete the protective substance. I have to some extent already discussed the question of phagocytosis, which is involved in the first explanation. To the objections that have been stated there are others which can be derived from the results of observation and experiment. In many instances, when immunity to a high degree has been produced by venom, no increase can be found in the number of leucocytes immediately or at varying periods after the subcutaneous injection of large though, in the circumstances, easily tolerated doses of venom. Further, when one-half more than the minimum lethal dose of venom is mixed outside of the body with antivenin, and the mixture injected into an animal, the quantity of antivenin required to prevent this lethal dose from producing death is only the quarter of a cubic centimetre, whereas if the antivenin be administered half an hour before the same dose of venin so much as 3 cubic centimetres are required. That is to say, in conditions which are the more favourable for the proliferation of leucocytes, or for the production by them of protecting substances, the antivenine is less efficient as a protecting agent than when the conditions are much less favourable.

As to the second theory, often termed the reaction theory, it is also opposed by the experiments I have last mentioned, but equally so by the fact that a high degree of immunity can be produced by an appropriate adjustment of doses without any observable reaction occurring. Even when a distinct reaction, such as an elevation of temperature, is produced during the process of immunisation, the production of the reaction is in itself of no other significance than that a dose of an active substance sufficiently large to cause an observable effect had been administered. The subject, however, is surrounded by difficulties, not a few of which have arisen from the attempt to obtain an explanation without separating the influence of the microbe from that of the toxin, with the result that biological conceptions have perhaps been introduced unnecessarily into the consideration and discussion of the subject. As a contribution to the solution of the problem I would advance the following facts. Although searched for no proteolytic or fermentative action has been discovered in the case of any toxin or venom; by subjection to certain external influences, such as elevation of temperature and the influence of electric currents and of certain chemical reagents, toxins and venoms may have their poisonous action destroyed while the immunising or protective action is retained; and toxins have been found actually to contain protective or remedial substances along with their toxic ingredients, as shown, for instance, by Hunter in the case of the toxin of tubercle.

These considerations suggest that the protecting substance originates directly from the toxin or is indeed an ingredient in its complex composition. The suggestion is supported by experiments which show that the degree of protection artificially produced in an animal—for it is, perhaps, not unnecessary to state that protection and immunisation are only relative and not absolute—is proportional to the total quantity of toxin or venom introduced, rather than to the amount of reaction produced in the animal by any of the several administrations. The remarkable facts which have been described in connexion with the stomach administration of venom, obtained also by Ehrlich and Kobert with the somewhat similar bodies, abrin and ricin, and by Valli with the virus of hydrophobia, seem likewise to receive their most satisfactory solution on this supposition. A dose of venom several hundred times greater than is requisite to produce death by subcutaneous injection fails when introduced into the stomach to produce any poisonous symptom whatever, but still so protects the animal that considerably more than the minimum lethal dose may now be subcutaneously administered without producing death. It is difficult to account for these facts otherwise than by assuming that the venom while in the alimentary canal had been subjected to a process of analysis, as the result of which its toxic constituents had been separated from those which are antitoxic or protective; and while the former had either been destroyed or had failed to be absorbed the latter had passed into the blood in sufficient quantity to protect the animal against otherwise lethal administration of venom. There are undoubtedly many facts still required before a convincing explanation can be formulated of the origin of the antitoxic substances that appear in the body after the reception of pathogenic or other similar toxins; but the facts already ascertained appear to indicate that the antitoxic or immunising substances originate not from vital reactions upon constituents of the body but from the toxins themselves, being produced by chemical changes in them, or being actually among their normal ingredients. The question is not only of scientific interest, but it has also a practical bearing. The manufacture of the immunising substance is attended by much difficulty. A satisfactory antitoxin can rarely be obtained until a tedious process, extending over several months, has been followed. Anti-pneumococcus serum requires so long a time as six months, the immunising serum of yellow fever from twelve to eighteen months, and the nearest approximation yet obtained to a satisfactory protecting serum for tubercle the almost impracticable period of several years. Were it recognised that the antitoxin originates directly from the toxin the preparation of it would be freed from existing difficulties and mysteries and after some necessary chemical research it could be produced in the laboratory and thus brought into closer relationship with ordinary medicinal substances. Any generalisation in

medicine, while it may serve the useful purpose of emphasising advancement in knowledge, must remain barren of practical result unless it also supplies general principles as well as specific indications for treatment. It may with some confidence be stated that the doctrine of the toxic origin of disease does not fail in these respects.

In the case of ordinary poisons it has been well established that recovery is largely promoted by hastening the removal of the poison from the body, especially by means which it is the province of pharmacology to indicate, and the eliminative treatment which has long been followed in many diseases thus finds in their now definitely established toxic origin a sufficient explanation and justification. Clinical and experimental evidence, not restricted to ordinary poisons but gained also from the study of the effects of toxins and venoms, has taught us that treatment should also include the adoption of measures for increasing the resistance afforded by the body to toxic and morbific processes. If a dose of venom below the minimum lethal be administered to an animal and after all obvious symptoms of poisoning have disappeared this dose be followed by a second, also considerably below the minimum lethal, the animal may die, although each dose was in itself insufficiently large to cause death. If an animal has been inoculated by a non-lethal quantity of the virus of a recognised disease such as anthrax, and after recovery has apparently been established if a non-lethal dose of the virus of another disease be inoculated, death will follow the inoculation of the second dose, although that dose is quite insufficient of itself to produce death in an animal which has not previously been thus treated. In both cases the power of resistance has been so weakened by the first and apparently recovered from administration that a quantity of virus in itself insufficient to cause death now succeeds in doing so. From such examples the explanation is found of the widely prevalent employment of means to increase the strength or resistance of a patient, of the value of tonics and foods and of fresh air and light, not only in promoting recovery from illness, but also in actually preventing a fatal termination. Expressed in another form these constitute means for slightly increasing for any given degree of disease the minimum quantity of the disease-producing influence or substance required to produce that degree of disease. These as well as other methods of treatment that might be referred to do not, however, directly affect the true cause of the malady. Hitherto this cause could be counteracted or opposed only in the instances of the well-known poisons which are dealt with by toxicology and of a very few diseases such as ague and syphilis, in which the cause was surmised, without being proved to be a poisonous substance; and in substances fitted to antagonise these poisons by chemical combination or, though only to a limited extent, to counteract their effects by physiological processes, therapeutics has possessed satisfactory resources. By the demonstration of the production of many diseases by toxins generated by micro-organisms the opportunities for the application of these principles has been greatly extended. Diseases whose treatment had previously rested on an uncertain basis have now been brought into the range of rational therapeutics, and it has been shown that morbific processes which had already become so definitely established as to display serious symptoms can be entirely arrested and, above all, that illnesses which would otherwise inevitably terminate in death may be so perfectly controlled that the fatal termination can be prevented and recovery ensured. A dose considerably above the minimum lethal of the toxin of tetanus is administered to an animal. Several hours after the administration, when symptoms of tetanus had manifested themselves, the antitoxin of tetanus derived from an animal which had been immunised against the virus is injected under the skin and in a short time afterwards the symptoms of the disease disappear and the animal recovers. A dose of cobra venom sufficient to cause death in two or three hours is administered to an animal. The venom illness is developed and while it is quickly advancing to apparently an early death a dose of antivenin—the blood serum of an animal highly immunised against this venom—is administered and by-and-by the symptoms become mitigated and in a few hours the animal, which otherwise would certainly have died, is restored to a perfectly normal condition. By this antidotal treatment, further, not only is disease arrested and even death conquered, but the structural alterations in the muscle fibre and elsewhere that the tetanus toxin produces, and also the acute and rapid changes in the parenchyma of the kidney, characterising the poisonous action of serpents' venom, are altogether prevented from occurring. How are these marvellous therapeutic or curative effects to be explained? The explanations that have been advanced are essentially the same as those applied to the production of immunity and they have already been disposed of in the discussion of that subject. Specially bearing on the therapeutic aspect of the question are the further considerations, that antitoxins are destitute of any distinct physiological action, and, founding on Declory's recent work on antivenine, antitetanine, and the antitoxin of diphtheria, they have no influence on the processes of ultimate nutrition. Their curative action cannot therefore depend on physiological antagonism and it is highly improbable that it has any biological basis whatever.

Referring again to experiments made with serpents' venom, when this venom in lethal quantity is mixed in a test tube with a small quantity of antivenine the venom almost instantly loses its toxic power. Further, if the smallest quantity of antivenine required to produce this change after contact for a definite time with a lethal quantity of venom be determined, it will be found that if the time of contact is lessened this quantity of antivenine is no longer able to remove the toxicity of so large a quantity of venom. When, again, venom is injected under the skin of an animal at the same time as, but in a different position from, the antivenine, the quantity of the latter required to prevent death is for the same dose of venom about twelve times larger than when the two substances have been mixed together before they were injected. Such distinctions are difficult of explanation otherwise than by supposing that a combination, chemical or mechanical, is effected between the antivenine and the venom, for they indicate that when the conditions are the more favourable for ensuring contact between the antitoxin and the toxin the antidotal action is more powerful than when the conditions are less favourable for this contact. This view is also supported by the fact that if the antivenine be administered after the venom the dose of the former required to prevent death is enormously larger than when the two substances are simultaneously administered after they have been mixed together outside of the body. In the case of antivenine and venom the difference is as great as 1 to 1200. This experimental result, harmonising altogether with a physical as distinguished from a biological explanation of the antidotal action of antitoxins, emphasises the lesson, gradually receiving acceptance in practice, that for the effective treatment of an infectious disease the quantity of antitoxin must be a very large one, and at least 1000 times greater than is indicated by the *in vitro* experiments by which their antidotal power has usually been determined and standardised. For this reason the antitoxic serums frequently in use at the present time must be regarded as too dilute solutions. It is indeed probable that the process of immunisation, even when carried to its utmost limits, is incapable of producing antitoxic serums sufficiently powerful, in doses which can be administered, to cure a patient suffering from the effects of a large lethal quality of toxin. Chemistry, however, has as yet left almost untouched the investigation of antitoxic serums, and it may confidently be expected that when more knowledge has been obtained of their chemical composition this difficulty will be overcome by the separation of the curative from the worthless ingredients.

THE PRESENT POSITION OF SERUM-THERAPEUTICS.

By such results as are exemplified in the experiments that I have described a new era has been originated in practical medicine. Considering how limited were the means—if, indeed, they previously had existed—of actually preventing death when the fatal disease conditions were already present a special fascination attaches itself to the subject of antidotal treatment of disease, the newly created serum therapeutics. It has merely entered the first stages of its development and has had to contend in its applications to human beings with the difficulties presented by the presence of undiscoverable amounts of disease toxins diffused by living generators of it, which are present in the body in unknown quantities and in varying toxic potentialities. The results already obtained are, however, of much value. Diphtheria has had its case mortality reduced from 70 per cent. to 26 per cent., or, according to another estimation, from 40 per cent. to 8 per cent.; hydrophobia has been so far brought under therapeutic control, by means which have not as yet been developed to their full efficiency, that its mortality has shrunk at least from 16 to 1 per cent.; the prognosis of tetanus has been deprived of much of its gloomy forebodings; the cure of pneumonia, of tubercle, of erysipelas,

and of septicæmia is on the eve of being realised; a complete demonstration has been obtained of the power of anti-venomous serums to prevent the toxic and lethal effects of venoms; and the experimental data are being surely accumulated for completing the greatest triumph of preventive medicine by the discovery of an antitoxic serum for the cure of small-pox.

These, however, are to be regarded as merely the first fruits—in some cases requiring further maturing by the light of science—of the ample harvest which is ripening. Their acquisition at the same time has been sufficient to supply materials for constructing in perfect outline the doctrine of the toxic origin of disease to which I have ventured to ask your attention. This doctrine has at least the merit of being able to bind together in one harmonious unity the conception of the actual nature or essence of a large number of diseases, including those which most urgently demand consideration. It supplies a simple and intelligible basis for treatment. Under its directing influence it may confidently be anticipated that medicine will reach a position of definiteness previously unattainable; and, above all, that the healers of disease will have their resources rendered more effective and beneficial for mankind.

Address in Surgery:

THE PRESENT POSITION OF SURGERY.

Delivered at the Annual Meeting of the British Medical Association at Edinburgh, July, 1898,

BY THOMAS ANNANDALE, F.R.C.S. EDIN., F.R.C.S. ENG., F.R.S. EDIN.,

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MR. PRESIDENT AND GENTLEMEN,—I desire to join my colleagues in offering you a most sincere welcome to Edinburgh, and I desire also to express the hope that you will all be able to look back upon your visit here as pleasant, interesting, healthy, and profitable both to mind and body. When asked by a deputation of my colleagues in Edinburgh to give the Address in Surgery I felt that an honour had been very kindly and courteously shown me; but in accepting this offer I also felt that I had undertaken a responsibility—a responsibility which called upon me to speak to this distinguished audience as a representative of Scottish surgery. This responsibility was all the more serious to me for my friends know well that I am more ready with the knife than with pen or speech, and as my daily life for many years has been to lecture and demonstrate to students as babes entering the profession I had some fear that I might be offering to you as men and kings in the profession baby's food. My first difficulty was to select a text on which to address you. I might have offered you some of the results of nearly forty years of active hospital and private surgical practice, but I felt that an account of any such results was more fitted for the departmental sections. I also at one time thought I might have endeavoured to prove to you—and I think I could have proved to you with success—how much Scottish surgeons and Scottish work have assisted in the development and improvement of surgical practice, but with this thought there suddenly came to my mind the old Scotch saying, "Ye'll hae a guid conceit o' yersel," and accordingly I at once dropped the idea of Scottish self-glorification. After consideration it seemed best to me to take some more general text, and accordingly I decided to offer you a few remarks upon the present position of surgery. It must, I think, be universally acknowledged that the present position of surgery is of the highest. There are now few diseased conditions in which surgery does not play a very essential part in connexion with treatment, and there is scarcely a single organ of the body, internal or external, which is not the subject of successful surgical procedure. The brain, the organs of the chest, abdomen, pelvis—many of which were so long looked upon as belonging solely to the province of the physician—are now shared, if not principally absorbed, by the surgeon as regards the relief or cure of their diseases.

It has sometimes occurred to me that on not a few occasions my esteemed colleagues the physicians have a strong longing to be surgeons for the time being, in order that they might be able to carry out some surgical procedure which their experience has taught them to be more efficacious than medicine. For the sake of convenience and partly also, as is known to some here, that a discourse in this country is not considered complete unless delivered under from three to twelve heads, I propose to treat my subject under certain heads. In consideration for your feelings and time I propose to confine these heads to three, the minimum number allowed, and to speak of present surgery in (1) its scientific aspect, (2) its practical aspect, and (3) its moral aspect.

I.—ITS SCIENTIFIC ASPECT.

It must at the outset be acknowledged—and acknowledged with gratitude—that the marvellous advances in connexion with present surgical practice are largely indebted to those who have diligently, honestly, and successfully carried on experimental and other research in connexion with the sciences of chemistry, physiology, bacteriology, anatomy, and pathology. We, as surgeons, look forward hopefully to receive the continued aid of these gentlemen in still further promoting our art, and it should be our duty to encourage and assist in every possible way all such scientific work—work which in connexion with surgery can only be considered to be in its early infancy and which will require much care, accuracy, and close industry to establish its steady and sure growth. I would now refer to some of this scientific work which has so benefited surgical practice. To speak of the antiseptic system at the present time is to speak almost of ancient history, but two reasons prompt me to refer to it. First, because it was in this school that its distinguished author carried on those carefully conducted and original researches and experiments which led him to suggest this great principle. Secondly, because I have lived long enough to have had experience of three epochs in connexion with surgical wounds. As a young apprentice more than 40 years ago I witnessed the dressing of wounds by the application of layers of ointment, the edges being brought together by sutures of thick silk and the arteries secured by ligatures of the same material, the ends of the ligatures being left hanging out of the wound and acting much like setons. As a dresser under the great Syme I learnt the simpler methods of water dressings and of dry dressings, and, lastly, as a pupil and colleague of Lister I had the good fortune to follow the various stages of the developments of the antiseptic treatment. In the first of these epochs I gained a large experience in connexion with septic suppuration, hospital gangrene, pyæmia, and septicæmia, all of which conditions were common and frequently led to fatal results. In the second epoch my experience of septic suppuration, pyæmia, and septicæmia was small in comparison, but still too common. In my third and present epoch such experience has been reduced to a minimum.

In the early stages of the antiseptic suggestions failures undoubtedly occurred, but such failures when honestly investigated were important as lessons, and the consideration of their causes did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required, and when such treatment was unsuccessful condemned the whole system. Let me quote a sentence from an address which I gave when appointed Professor of Clinical Surgery in this University, now twenty-one years ago: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful, and scientific research; of vast, laborious, and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister." I confess that I was one of those who, while carefully watching the progress of Lister's work, and thoroughly believing and greatly admiring his great scientific abilities, was at first cautious in accepting all the details of its practical application because I felt that these were somewhat complicated, and it was certainly a great relief to my mind and to the minds of many others, I am sure, when it was found that in actual practice many of these details could with safety to

the principle be much modified and simplified; and, further, I had learnt from experience that even with the use of antiseptic treatment the ordinary principles of rest, avoiding causes of irritation, and attention to the general health must not be ignored. I know that no one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified and so used under circumstances which formerly made it difficult or impossible to carry out. But while the external application of antiseptic means and precautions is now thoroughly established upon a simple and at the same time efficient basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important a study in connexion with disease and with the results of injuries and surgical procedures. It is to a further study and knowledge of this science—which must be considered as still in its infancy—that surgery as well as medicine looks for more light in connexion with the causation and treatment of diseased conditions.

Although experimental and pathological research and clinical observation have already done something to explain and determine the action of certain organisms the particular manner in which these organisms cause in one case no result and in others injurious results cannot be considered as proved. We certainly have learnt certain facts: first, that organisms of various kinds gain entrance into the tissues or organs of the body; secondly, that some special condition of these tissues and organs favour their development and multiplication. Such organisms vary much in form, source of origin, situation where chiefly met with, conditions under which they develop or are destroyed, and the special effects which they produce. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behaviour in connexion with the tissues. Further, it would appear that the resulting toxin may not itself produce the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results. The conditions of the tissue or soil in which the organisms settle has much to do with the results caused. Individualism, age, constitution, the general condition of the patient, and any local condition, more particularly any condition which interferes with the vitality of the tissues, influence much the action of organisms. The resistance of the tissues to the injurious effects of organisms depends upon the condition of these tissues, upon the activity of the organisms, and upon the amount and virulence of the toxins developed. It appears that it is the spores of organisms which most resist destruction, and as these spores may germinate not only in the tissues but outside the body they act as a serious source of infection. From the facts I have just stated it will be judged what difficulties arise in connexion with the study of bacteriology, and consequently with the treatment of the injurious results produced by the numerous organisms which invade and affect the human body. Bacteriological experiments upon the lower animals may in some instances aid us, but the conditions of the lower animals are not always the same as those of human beings, and therefore results obtained in the former are not always safe guides as regards results in the latter. Continued careful study of anatomy and pathology and accurate clinical observation should do something to increase our knowledge, but I venture to think that much of our future trust for light must be in connexion with physiological chemistry, which we hope may be able to teach us more of the origin, causation, and behaviour of the various toxins and of the action of the tissues in connexion with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavour to treat the general effect of these toxins either by the administration of remedies supposed to produce a general antiseptic effect—but it cannot be said that such treatment has proved satisfactory except in a limited number of cases—or by the introduction into the tissues by subcutaneous injection of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connexion with surgical conditions must have encountered this uncertainty as to their action. My own experience is that though some severe cases of septicæmia have recovered after the injection of an antitoxin other cases very similar have recovered without any antitoxin being used. I would suggest that another important subject for further study is the physiological action or connexion between one tissue or one organ and another. May not further experience of this connexion help us in carrying out treatment based upon this connexion? Take, for instance, the suggestion of Beatson for removing the ovaries in cancer of the female breast, incurable by other means. Having thought it my duty to test this suggestion I carried it out in three typical cases, and my experience and the experience of others who have tried this procedure has been that though the disease was not cured the removal of the ovaries had certainly some influence upon the diseased local condition. I venture also to suggest that as a possible and further addition to treatment some more careful work should be devoted to the action of drugs upon the toxin poisons, such drugs being introduced either by the mouth, by subcutaneous or intravenous injection, or by inhalation. We know that large quantities of saline fluid may be injected into the veins with safety and it is therefore not unreasonable to suppose that other solutions of a non-irritating and antiseptic nature may be similarly employed. The remarkable results obtained by thyroid extract should be an encouragement to us in this respect and it has already been proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins it will much simplify our treatment, for such remedies would be more easily and more certainly handled than the antitoxins now in use. The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Coley and others by the mixed toxins of streptococcus and prodigiosus do show some hopes, for under the use of these toxins growths have undoubtedly disappeared, but I think that all who practise surgery will agree with me when I say that sarcomas and other growths do occasionally undergo a check in their development and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

Reference to the scientific aspect of surgery would not be complete without some notice of the "New Photography." Ordinary photography has always been of great assistance to surgeons and will continue to be so for the illustration, progress, and record of many of their cases, but its new and latest development has already proved to be of the greatest service in diagnosis and consequently in connexion with successful treatment, and an improved development of it will no doubt add still more to the success of surgical practice. The scope of this department of science is a very wide one and by its means we may add much to our knowledge of osseous development and growth, of the relation and position of internal organs, and of the actual condition of diseased parts. In connexion with many surgical conditions, and especially in connexion with injuries of various kinds, this photography is invaluable.

In leaving this, the scientific portion of my address, I desire again to express the indebtedness of practical surgeons to those discoverers and workers in science who have by their honest and accurate observation obtained results which have done so much to improve our practice and so to render our treatment more successful.

II.—ITS PRACTICAL ASPECT.

To one like myself who, as apprentice, student, and surgeon, has for more than forty years followed the practice of surgery its steady and remarkable progress is a most interesting study. In watching this progress it not infrequently appeared as if perfection in some particular procedure had been reached, but a little more experience or a little more observation gave rise to a suggestion which entirely drove the so-thought perfection from the field and opened up a new and important practice with resulting benefit to suffering humanity. There are few surgical procedures which have not undergone some change and marked improvement since I first commenced the study of surgery and the number of new procedures suggested would require many pages even to enumerate them. While not a few of these suggestions have become established in practice many others, being founded on incorrect or ignorant principles, have perished and deservedly so. To myself and to others it has often been interesting to observe the gradual development

of some procedure or treatment; a suggestion made by one surgeon would lead to an improved suggestion by another and this process of improvement might again be taken up by a third or fourth until at length its thorough success was established. My Scottish modesty prevents me from referring to work of my own, but it will always be to me a feeling of satisfaction that in connexion with my very special opportunities for experience in surgical practice I may, in some small way, have been able to assist in adding to or originating such suggestions and improvements. I know I shall be excused if I here refer to the fact that to the great Syme I owe my opportunities for the study and practice of surgery, and it was in connexion with my intimate association as his assistant for more than ten years that I learnt how to attain and how to exercise the qualities which are the essence of good and honest practice. Another personal incident I may be allowed to mention is, that as a baby I once rested in the arms of the great surgeon Liston, who was the favourite chief of my father, and although at that time I received no bodily nourishment from him in after-life I obtained much surgical nourishment from the study of his writings and work.

The advances in our scientific knowledge, combined with extended and more accurate clinical observation, have, as has already been stated, assisted much in the improvement of practical surgery, and the development of what I would designate honest specialism must also be looked upon as adding to our practical resources and treatment. If asked to define any special characteristic which will apply to the practice of surgery at the present day I would be inclined to say simplicity—antisepticity, of course, being granted—a simplicity in which is included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency. In a general address such as this a reference to all the improvements which have taken place and are taking place is quite unnecessary, as such improvements must be well known, or should be known, to all who desire to carry on with success the active practice of surgery. For such knowledge we have not only our own experience to aid us, but we have to thank the medical press and the many distinguished authors who by their books and papers bring the results of their own experience and observations and researches under the notice of the profession. Although so many and so great changes have taken place as a result of the advances in the departments of science already referred to it would be very wrong to ignore the work of those surgeons who are no longer with us. Many of these surgeons showed a knowledge and wisdom and forethought of conditions and procedures which have stood the test of time and still remain sound and correct as monuments of their genius. This knowledge was principally the result of shrewd and careful clinical observation and reasoning, for they had little or no scientific aids to help them, and their success under such circumstances should be an example to all of us to make every use of our clinical opportunities and to observe closely, carefully, and honestly. But the practice of surgery has not only reached a high standard of improvement, but it has much widened its area both as regards the number of its procedures and the number of those who practise them. This is scarcely the time or place to discuss the exact relationship between surgery proper and what is called gynæcology. Of late years these departments have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both are really surgical procedures and both require for their proper and successful performance that training and those qualities which make the good surgeon. That physicians under the designation of gynæcologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and as time goes on some balance may perhaps be arrived at which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In this greatly improved era of practical surgery it is well perhaps to suggest a caution, for there is undoubtedly a tendency—and more especially in the case of some of our younger colleagues—to be too ready to resort to surgical procedures. When greater risk was attached to operative procedures surgeons young and old had, for the sake of their patients and their own reputations, to take into account these risks even in comparatively slight operations; but now that so little risk attends operations they may be undertaken without due consideration of all the circumstances or necessities of the case. I would as a senior colleague venture to remind my younger friends that Nature, with perhaps some little non-operative treatment, will do much, and that no operative procedure should be suggested or practised until the case has been thoroughly studied and found to be unrelievable by other means.

As a practical surgeon in this, the Edinburgh School of Medicine, it may be expected that I should refer to my experience of anæsthetics, and I accordingly express the opinion that chloroform holds the field as the best general anæsthetic in connexion with surgical procedures; and although I have met with a few fatal results from its administration I have most thorough confidence in its safety if carefully used and its effects diligently watched. Perhaps the best test of my confidence is the fact that having a few years ago suffered from a poisoned finger received when operating I required to take an anæsthetic on several occasions in order to have deep incisions made for the relief of extensive suppuration. The anæsthetic I took was chloroform, and it was administered according to the "open" method by one of my assistants and not by any special anæsthetist. It is my opinion that fatal results will occasionally take place in connexion with all anæsthetics, and that these fatal cases may be divided into (1) avoidable, and (2) unavoidable. The avoidable ones are those which are due to careless administration or to neglect of means to prevent blood or other matters entering the air-passages, and should not occur if proper care is exercised. To avoid these risks it is essential that one person should give sole attention to the anæsthetic and watch both respiration and pulse, more especially the respiration and its nature, during the whole period of its administration. I need scarcely say that the preparation of the patient is, when possible, important. I prefer to give a small basin of plain soup about two hours before the chloroform is administered and, if the patient is feeble or the operation likely to be attended with much shock, a tablespoonful or more of brandy or whisky a quarter of an hour before the anæsthetic. In cases in which there is a risk of matters, and especially of blood, passing into the air-passages, the dependent position of the patient's head, as advocated by me in 1879, will often prevent this accident, and should it take place immediate tracheotomy must be resorted to if the symptoms are serious. The unavoidable cases are, in my opinion, the result of heart failure from fatty or other conditions and occasionally, I believe, they may be caused by cerebral conditions, as I have seen a fatal case in which the symptoms resembled most an epileptic seizure. Further, I believe that in the majority of these unavoidable cases it is impossible by any external examination prior to giving the anæsthetic to discover the condition which has led to the fatal result. I am inclined to think that the avoidable accidents are more frequent than the unavoidable, and if so it teaches us how important it is to avoid, by careful preparation and administration, anything likely to bring about an unfavourable result. I would like here to give a word of warning as to the use of cocaine in local anæsthesia, and more particularly when it is used by subcutaneous injection. My experience is that some individuals are specially susceptible to its action, and therefore, if too strong a solution or too large an amount of a weaker one is injected, the result may be faintness and serious interference with heart action. It should therefore be used cautiously and a stimulant be given, or be at hand in case of such symptoms occurring. Not wishing to weary you, I close my remarks under this head by referring to the importance of taking carefully into consideration everything likely to influence the performance or result of any surgical procedure, and when possible to first remove by proper treatment conditions likely to interfere with or to retard the recovery of the patient. It is not age or apparent feebleness which is likely to cause anxiety, but it is the condition of the organs and the tissues which should guide the surgeon, for if these be in a weak or in a diseased state they are more likely to become the soil for injurious bacteriological development and action.

III.—THE MORAL ASPECT.

I make no apology for offering a few remarks under this head, with the explanation that I employ the term "moral" in its highest and widest sense, for I am decidedly of opinion

that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart and who desires to maintain the honour and reputation of his profession to speak out with no uncertain meaning in regard to every action which is dishonest or dishonourable or tends to be so. The actions and practices of so-called quacks or unqualified individuals are much to be deplored, and it is in every way desirable that legalised checks should be established so as to prevent or limit them, and more particularly in the case of the ignorant and uneducated public. If the educated public consult such practitioners—and it is not very uncommon for them to do so—they can only blame themselves should unfortunate results take place. It is, however, of practices inside the profession of which I wish to speak. It is sincerely to be regretted that in some quarters the true, honest, and high feeling which should be the standard principle of the members of our profession is in the present day partially or wholly ignored, and in consequence our profession is not always respected as it should be and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patients' cure or relief. Three causes seem to me to influence this much-to-be-lamented evil which has insidiously invaded our profession—(1) active competition, (2) untrained specialism, and (3) Society demands.

There can be no doubt that the number of medical practitioners has increased, but in connexion with the increase of the population this increase in numbers is not so great as is generally supposed. A few years ago I selected statistics in connexion with this question and, taking some of the largest provincial towns in England and Scotland, I found that the number of medical men as compared with the population was very little changed from what it had been twenty years before. The active competition therefore is, in my opinion, not so much due to the increase of medical men as to the fact that in many instances the most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession. My suggestions for the cure of this are that those who constitute the few should be specially careful to guard and encourage the interests of the many, should not seek to secure every remunerative appointment within their reach, but should at least leave some crumbs for their less fortunate brethren.

The second cause is untrained specialism. I have already stated that honest specialism has aided much the practice of surgery, and by honest I mean such practice as is founded upon a thorough knowledge of all the different departments of the profession and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialised. Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession. There are few who endeavour to practise their profession with integrity who have not met with cases in which mere symptoms have been treated by operation or otherwise, the real source of the diseased condition having been entirely ignored, either through ignorance or for reasons which can only be classed as contemptible and degrading to the profession. The cure for such practices is not easy, and it can only be hoped that the honest members of the profession will note such practices and endeavour to check them by exposing their real nature and by endeavouring with tact to educate the public mind to avoid those who practise them as unsafe and possibly dangerous advisers.

The third cause is Society demands. A section of the public, or I should rather say a section of what is termed "Society," has done much to interfere with the proper feeling which should exist in our profession. Men, women, and even young people read and discuss professional matters and diseases; books are published and advertised which are written more to catch the eye of the public than to advance the knowledge or reputation of the profession; a certain class of newspapers and periodicals devote one or more columns to professional subjects, and even give gratuitous advice in the form of Questions and Answers. The manners, qualifications, and doings of members of the profession are freely criticised at afternoon teas and other entertainments. One man is condemned and some supposed failures in treatment are magnified or invented, while another receives extravagant praise and many of his wonderful surgical or other procedures are lauded and not infrequently described with marvellous details added. One is glad to think that in the majority of instances the surgeon or specialist has no art or part in such proceedings and, having with justice confidence in his abilities and upright conduct, much regrets that they should exist and does all he can to prevent their occurrence. But there are some, I fear, who take advantage of such extravagant popularity and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. It is fortunate that there still exist among the public in all classes of society many who are endowed with nature's nobility and good feelings and who are not influenced by the extravagant or false opinions of fashion, but who have both respect and esteem for those members of the medical profession who conscientiously devote themselves to the relief of suffering. We can all hope, but I fear hope in vain, that those members of Society who lead a frivolous, useless, and sometimes unholy life may some day realise that they are not acting as true citizens of their country or taking any proper interest in the welfare of their countrymen and countrywomen. If some of their energies, some of their time, some of their sympathy, and some of their money were employed to assist their fellow-creatures they would themselves reap reward by feeling that their lives were not altogether a selfish existence. If any member of our profession encourages or takes part in Society's ignoble life or actions he is not worthy to belong to the profession and he certainly does not add to its reputation.

In conclusion, Mr. President and gentlemen, I wish to thank you all for the patient and kind manner in which you have received my address and more particularly because I feel that I have not been able to offer you anything which is new or original. I would also wish to express how great a pleasure it has been to me to meet so many of my distinguished and representative colleagues. We are all labouring in the cause of our noble profession and it becomes all of us to join hands and to assist and sympathise with one another, so as to advance our science and art and in this way increase our power for the cure and relief of humanity.

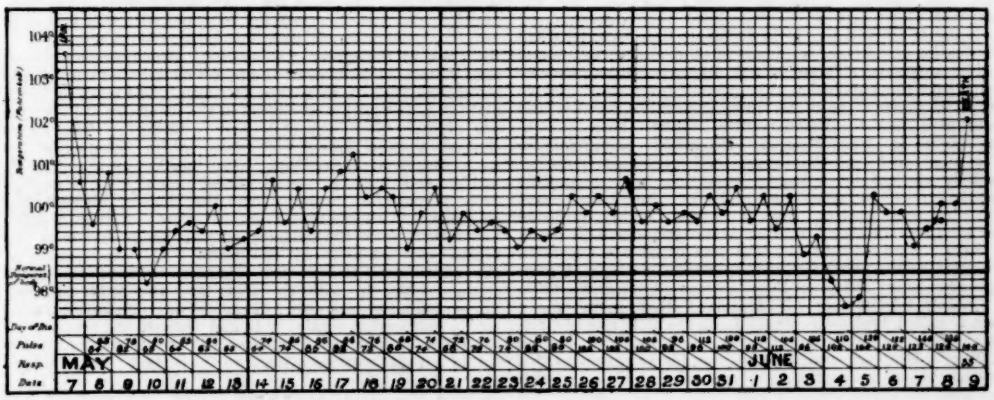
AN ANOMALOUS CASE OF CONTINUED FEVER WITH PERFORATIONS OF THE INTESTINE.

BY SIDNEY HERBERT SNELL, M.D., B.S. LOND.

With Note by Sir WILLIAM BROADBENT, M.D. Lond., *Post-mortem Report by* Dr. HUGH R. SMITH, *and Pathological Report by* Dr. E. D. W. GREIG.

THE patient was a man, aged forty-five years, a brewer, who had always been of quiet and temperate habits, living a plain semi-country life. He was of somewhat nervous temperament, with an occasional tendency to dyspepsia. He had not left home for over two months or eaten oysters. The illness commenced about April 20th, 1898, though it appears that he had not been feeling quite well for some weeks previously. On the 29th he was driving for some time in heavy rain, but does not seem to have been really wetted; however, that night he had a sharp attack of diarrhœa. I saw him on Sunday, May 1st, and noticed that he had a very yellow, "livery" appearance. On the 2nd I was requested to see him professionally. He then complained of a feeling of general malaise with slight headache; the "livery" appearance of the face had increased, but there was no actual jaundice and no fever. The tongue was coated with a white fur; the urine was normal. The bowels were acting once daily, the motion (the patient's description) was of a somewhat light colour with a little slime. Apparently the patient had some simple congestion of the liver. The symptoms continued without relief and on the 4th there was a little pyrexia. On the 5th the pyrexia had increased and the patient was placed in bed. On the 6th the temperature was 102·5° F. in the morning and 102·8° in the evening. There was still the same yellowish appearance but no jaundice. The bowels were open every day; the motions

were slate-coloured and semi-formed, with some mucus and occasional streaks of blood, but these last were obviously from hæmorrhoids, and the patient told me that they were often present when he was in good health. On the 7th the temperature was 103·6° in the morning and thereafter the temperature was recorded regularly every four hours. The patient was now treated as for typhoid fever. The high temperature fell rapidly until it reached normal on the 10th; it then again rose and continued vacillating between 99° and 101°, the highest temperature being usually recorded about 4 P.M. and the lowest at 4 or 8 A.M., but no great regularity was present. The patient's tongue remained thickly coated with whitish fur and was at times very dry. The pulse was slow, varying from 64 to 80; these variations seemed to occur for no particular reason. In ordinary health this patient's pulse was usually about 65. At this period of the illness, of course, I was in the greatest perplexity as to the nature of the complaint. The possibility of typhoid fever occurred to me almost from the first, but apart from the continued elevation of the temperature there was not a single sign or symptom of typhoid fever. At times there was a little headache and anon some fleeting abdominal pains due to flatulence. The bowels continued acting daily, but about this time the motions assumed a somewhat chocolate-coloured tinge. On the 16th, with Dr. H. R. Smith, I tried Widal's serum reaction with negative results, the movements of the bacillus typhosus being absolutely unaffected by the introduction of serum from the patient. Nevertheless, at this date he was seen by his brother-in-law, the late Mr. Iliffe, medical officer gradually increasing frequency of the pulse. This, while maintaining its full, quickly collapsing character, showed an increase of frequency now varying between 90 and 100 and still exhibiting the characteristic of altering strangely in rapidity from time to time without apparent cause. There was no suspicion of dicrotism. On the 28th, therefore, digitalis was given (ten minims every 4 hours) and the amount of stimulant was increased to 6 oz. On June 1st there was mild diarrhœa for 24 hours, the bowels acting some six times, the motions being loose and yellow in colour—in fact, for the first time during the illness they became somewhat typhoidal in appearance. On this date the pulse was registered up to 120, yet the patient's general condition seemed fairly good and the mind was clear. Some emaciation was naturally now present, but it was by no means very marked; therefore, apart from the frequent pulse there seemed scarcely a grave symptom about him; but I laid considerable stress on the gravity of this sign in my prognosis to the friends. On June 3rd the sloughing hæmorrhoid separated and the midday temperature fell to normal. Save once, on May 30th, this was the first time it had touched normal since the fall on May 10th. For over twenty-four hours the temperature kept at or below normal; the patient was very weak but fairly cheerful and the outlook might have been hopeful save for the pulse, which kept varying between 90 and 110. On this day and night therefore the patient apparently presented the condition of being at the end of his attack of pyrexia, whatever it may have been, and, with the exception of the weakening heart, there were no morbid



of health of Derby (whose sudden death occurred a very few days after), who had, of course, had great experience in typhoid fever, and he gave it as his opinion that, judging largely from the patient's facial expression, the complaint was typhoid fever. On the 19th a slight trace of albumin appeared in the urine. On the 20th I asked Sir William Broadbent to see the case in consultation. He pronounced the complaint not to be, in his opinion, typhoid fever, and particularly he regarded the motions as not in the least enteric in character. The tongue, however, had now a dry brownish colour with a triangular patch clearing up on the tip. From the 12th the patient had had 1 gr. of quinine every four hours and after the 20th 1 gr. of calomel in a pill nearly every night; this last just kept the bowels acting about once daily. During all this time the patient's general condition was good and the prognosis was apparently favourable, with an absolute want of symptoms or signs of any kind, save an occasional complaint from flatulence and some nervous irritability. From the 19th to the end of May the temperature varied only between very small limits, practically never exceeding 100° or falling below 99°. On the 23rd he developed a thrombosed hæmorrhoid, which we hoped might be the cause of the slight continued temperature. The thrombosed pile eventually sloughed off. A little pain and stiffness of the muscles of the neck and limbs occasionally were present during the latter part of the month. Towards the end of the month, too, there became perceptible the first sign that gave any real cause for anxiety—a sign which was the most remarkable one in this illness, and that was the symptoms about him. How deceptive this short calm was became quickly apparent. On June 5th the patient began to show extreme weakness, while the pulse-rate leaped to 120 and a slight rise of temperature to about 100° again occurred. On deep pressure over the right iliac region there was now some distinct tenderness. On the 6th the mind began to wander for almost the first time during the illness, the pulse-rate increased to 130, still keeping its quickly collapsing character, and the patient's countenance assumed a very strikingly anxious and pinched appearance. The tenderness in the right iliac region was rather more marked, but the abdomen was not distended, not generally tender, and moved freely with respiration. At this stage Sir William Broadbent again saw the patient. From this time the pulse-rate rapidly increased and the patient very quickly passed into a pronounced typhoid condition and died on June 9th.

In the foregoing description of the course of this illness I have refrained from inserting negative facts; that the lungs were carefully examined, the spleen palpated, and the presence of any rash closely observed, readers will readily understand. Practically for the major portion of the attack the only sign of illness was a long-continued pyrexia hovering between 99° and 101°, with towards the end cardiac weakness, then death from heart failure. The report given below shows what was found at the post-mortem examination, which was possible in this case owing to the intelligence and common-sense of the relatives.

Note by Sir WILLIAM BROADBENT.—I saw this patient with Dr. Snell first on May 20th. There was nothing in his

appearance or facial expression at all suggestive of typhoid fever. The state of the tongue was the reverse of characteristic; the abdomen was normal in appearance and everywhere soft and supple; there was no enlargement of the spleen, but the liver could just be felt; no spots were or had been present. The motions, which had been kept for my inspection, were copious, heaped up, large-sized soft coils of a peculiar chocolate-brown colour, as unlike typhoid stools, therefore, as well could be. The temperature chart, again, was not that of enteric fever. Although, therefore, the investigation was begun under the idea that the continued fever of three weeks' duration without local cause was probably enteric, I came to the conclusion that this was not the case here. It seemed to me also that tubercle could be excluded, and the only diagnosis at which I could arrive was that there was intestinal sepsis of some kind, not specifically enteric or typhoid. On this hypothesis I recommended that a grain of calomel should be given daily for a few days. I was unable to modify my opinion at my second visit on June 7th, when, although the heart was evidently failing, the patient had not at all the appearance of a person dying from typhoid fever, nor were there any indications of perforation of the bowel when the abdomen was examined. It was consequently a great shock to me to receive a brief intimation that the cause of death was typhoid fever with perforating ulcers. Dr. Hugh Smith, however, added that the ulcerations were not of the usual character or in the usual situation, and this is shown by the excellent detailed description now given. The piece of intestine removed was afterwards brought to me for examination by Dr. Snell. I could find neither infiltrated Peyer's patches nor the elongated ulcers left when they have been destroyed by sloughing or ulceration. It is fortunate that bacteriological examination could come to the aid of clinical observation and morbid anatomy. There would otherwise have been no escape from the conclusion that typhoid fever could assume a type so aberrant as to be unrecognisable clinically, and could give rise to lesions quite unlike those usually met with in this disease. It would be premature to assume that the bacterium coli commune rendered specially virulent by unknown conditions was responsible for the train of symptoms and for the lesions met with in this patient, but it seems highly probable that such was the case. Further investigation will no doubt be made. I am reminded by this case of an opinion which I formed many years ago and to which, I think, I gave expression in my article on Enteric Fever in the first edition of Quain's "Dictionary of Medicine," that there was a disease called typhoid fever in India "which was not the enteric fever of this country." The late Dr. Wall, an old St. Mary's Hospital student, who gave his attention to this question at my suggestion, sent me clinical histories with post-mortem appearances which tended to confirm this opinion, but his early retirement from the Indian Medical Service put a stop to the inquiry. I still hear of anomalous instances of typhoid fever occurring in India which may be due to the specific bacillus, the effects of which are modified by climatic and other conditions or possibly may resemble the case related by Dr. Snell.

Report on post-mortem appearances by HUGH R. SMITH, M.D., M.R.C.P. Lond.—A necropsy was performed 20 hours after death. On opening the abdomen general purulent peritonitis was found which was evidently caused by three perforations in the small intestine between 12 in. and 16 in. above the cæcum. The peritoneal surface of the lower 3 ft. of the ileum presented several patches of intense injection corresponding in position with the ulcers subsequently discovered in the mucous membrane. The floor of these ulcers was very thin so that two more perforations were produced in the act of removing the intestines. Elsewhere the peritoneum presented no special features apart from the ordinary appearance of acute peritonitis. On opening the intestines the mucous membrane of the whole of the small bowel presented a normal appearance with the exception of the last 3 ft., where not only the mucous membrane but the entire wall of the gut was seen to be swollen, soft, and very pliable and in places in an almost necrotic condition; the lymphoid tissue was specially swollen, and the solitary follicles, particularly immediately above the ileo-cæcal valve, stood out very prominently. There were ten ulcers of the intestine, the first 3 ft. and the last 8 in. above the ileo-cæcal valve; they were irregular in outline and distribution, with fairly sharply-cut undermined edges and with smooth floors. In every case the necrotic process seemed to have involved the muscular layer, but in two or three the slough had not separated. The ulcers were not confined to Peyer's patches, although they seemed to start in the lymphoid tissue and tended to spread rather transversely than longitudinally. Five of the ulcers had perforated, but two of these were probably torn in removing the intestines. The mucous membrane in the neighbourhood of the ulcers was very swollen and friable and was slate-grey in colour. The mucous membrane of the large intestine was markedly swollen along its whole extent and was more friable than normal; there was no ulceration. The mesenteric glands in connexion with the diseased ileum were greatly swollen, but those in other parts of the abdomen were unaffected. The spleen was little if at all larger than normal. It felt soft, but was preserved entire for bacteriological examination. There was some collection of gas under the capsule of the spleen. The liver was fatty. The other abdominal organs were healthy. The heart showed very marked post-mortem staining and was soft and flabby and presented well-marked fatty degeneration of its walls. The other organs of the body were healthy. The brain was not examined.

Bacteriological report by E. D. W. GREIG, M.B. Edin.—The spleen, which was received 24 hours after death, was examined with the view of determining the nature of the organisms, if any, present. The spleen was placed in a sterile vessel and the capsule was sterilised by washing with absolute alcohol and then with hot sterilised distilled water. An incision was made into the spleen with a sterile knife. A number of stabs were made in different parts of the pulp exposed with a sterile platinum loop and with this a tube of ordinary peptone broth was inoculated. With a loopful of the juice of the spleen "successive" smears were made on agar plates. A portion of the pulp was removed with sterile scissors and placed in a tube of broth. The tubes of broth and the agar plates were placed in the incubator at 37° C. for one night. Next day they were examined. The plates showed a pure growth of round white colonies which were somewhat fluorescent. The broths were uniformly turbid and had a strong fæcal odour. A hanging-drop preparation made from the broths showed the presence of short bacilli which were slightly motile. Subcultures from the colonies on the plates and from the broths were made in all the media. The examination of the subcultures showed the organism to have the same characteristics in both the plate and the broth cultures. These characteristics were: (1) agar—was pure, and a microscopic preparation verified this and showed the presence of short bacilli with no filaments; (2) broth—was uniformly turbid but had a distinct scum on the surface; it had a very strong fæcal odour; at the end of three days the indol reaction was tested and found to be very marked; (3) glucose gelatin—a large amount of gas was produced; (4) milk—was coagulated in one night; and (5) potato—showed a fleshy yellow growth. From the broth culture a hanging-drop preparation was made at the end of twenty-four hours. It showed short bacilli very slightly motile. In other words, the organism gave all the reactions of the bacillus coli communis. Inoculation experiment.—A medium-sized guinea-pig received 0·5 c.c. of the broth subculture intraperitoneally. It died within twelve hours. Pure cultures of bacillus coli communis were obtained from the peritoneal cavity and spleen. This investigation shows that the bacillus coli communis was present in the spleen in a pure state. The inoculation experiment further shows that it was highly virulent.

Grays, Essex.

THE SOCIETY FOR PHYSICAL VOICE-TRAINING.—A meeting of this society was held on July 21st at London House, by kind permission of the Bishop of London. Bishop Barry presided, and made some strong remarks upon the importance of voice production. He thought the work was in very capable hands and had a fair prospect of success. Archdeacon Emery, the Rev. F. St. John Corbett, the Rev. R. Free, and others addressed the meeting and Mr. William Nicholl, the well-known singer and teacher, spoke of the necessity of balance between vocalisation and articulation. The report stated that lectures had been given in various parts of England, chiefly to the clergy, and at some of the training colleges.

FATAL CASE OF ACUTE POISONING BY LEAD CONTAINED IN DIACHYLON WHICH WAS TAKEN IN THE FORM OF PILLS FOR THE PURPOSE OF BRINGING ON A MISCARRIAGE.

By GEORGE F. CROOKE, M.D. EDIN.,

FORMERLY PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM; PHYSICIAN FOR OUT-PATIENTS AND PATHOLOGIST TO THE QUEEN'S HOSPITAL, BIRMINGHAM; AND LECTURER ON PRACTICAL PATHOLOGY IN THE MEDICAL SCHOOL AT BIRMINGHAM.

As this case was the subject of an important inquiry held by Mr. E. Docker, coroner for North Worcestershire, at King's Norton on July 9th I have thought it worth while to send an account of it to THE LANCET.

I was called to the deceased, a young married woman, twenty-three years of age, shortly after midday on Monday, July 4th. When I arrived at the house I found her lying on the floor of the front room, raving in maniacal delirium, struggling violently with those who were endeavouring to restrain her, and apparently writhing in great agony. Her seizures were paroxysmal, her intelligence was quite gone, and she seemed to be unable to recognise anyone around her. It was evident at a glance that she was suffering from the effects of some intensely irritant poison and on making a remark to this effect the husband, who was present, informed me that he had every reason to suspect his wife had been taking "stuff" to bring on a miscarriage. At the same time he handed to me a piece of diachylon or emplastrum plumbi from which it was evident by the numerous facets that pieces had been cut off with a knife. I at once told him that in all probability his wife was now suffering from the effects of acute lead-poisoning. Her breath was fœtid and exceedingly offensive; the tongue was dry and coated with a greyish-black fur; blackened sordes had collected about the teeth and gums, along the free border of which there was a distinct slaty-blue line. After administering an injection hypodermically of morphia and atropia to relieve what seemed to be paroxysms of colic she was put to bed. The rectum was cleared out by an enema and a draught of chloral, bromide and iodide of potassium was administered. On account, however, of a peculiar spasm of the throat I was obliged to resort to small enemata containing potassium iodide, and sulphate of magnesia, with which some bromide and hyoscyamus were combined. The patient soon lapsed into a state of coma, on which convulsions of a violent nature supervened. She seemed to be blind and on examining the optic discs I found that both were quite choked. I tried to draw off some urine with the catheter, but succeeded in obtaining only a small quantity, just sufficient to test. This sample of urine was quite turbid, acid in reaction, contained albumin, and under the microscope leucocytes, a few red blood-cells, free epithelial cells, and a few cellular and hyaline casts. Thinking the convulsions might be uræmic and due to some suppression of urine I gave pilocarpine subcutaneously to bring on diaphoresis. Although the convulsions gradually diminished in regard to duration and intensity, yet in spite of all that could be done the patient gradually became weaker and sank from exhaustion on Wednesday, July 6th, during the night. From the time that coma and convulsions set in the temperature became considerably elevated, especially before death (105·4° F.); the breathing was very rapid, laboured and stertorous. The conjunctivæ were insensitive; the pupils at first contracted but afterwards dilated and she never thoroughly regained consciousness. During the attacks of eclampsia I noticed that the left arm was practically passive; it scarcely moved, but seemed paralysed.

The following is the history of the case prior to the fatal seizure. It appears that she had been taking the diachylon for some weeks, and on the Tuesday previous, June 28th, she had a miscarriage in the water-closet belonging to a neighbour's house. This was the second mishap during the last six months and it occurred probably about the third month of pregnancy. She would not lay up after it, but went about as usual as though nothing had happened. All this time she was looking wretchedly ill, complaining of intense headache, of abdominal pain, anorexia and thirst, of attacks of diarrhœa and vomiting, of numbness and loss of power in the left arm and hand, and of general weakness and prostration. Although neighbours advised and her husband begged of her to call in medical advice she obstinately refused to do so. It seems that, under the impression that there was something more to come away, she went on taking the diachylon after her miscarriage so that the lead had been gradually accumulating in her system until, as is sometimes known to be the case, its effects manifested themselves with remarkable suddenness and violence on the day I was called in to see her.

Necropsy.—According to instructions from the coroner I made a post-mortem examination on July 8th, about thirty hours after death, the results of which are as follow. The brain was quite soft in consistence, the membranes covering the surface (pia-arachnoid) looked opaque and thickened in places, the opacity and thickening being more or less patchy in its distribution. The blood-vessels in the pia mater—veins and capillaries—were much engorged and distended with blood and I came across several arteries which were plugged with thrombus, greyish-white in colour, so that in transverse sections the thrombi appeared as minute greyish points. Sections of a thrombosed artery made with the freezing microtome showed the thrombus to be composed of a fine fibrillated network of fibrin enclosing leucocytes and a few red blood-cells, similar in every respect to croupous exudation. The thrombus was firmly adherent to the vessel wall. The pia mater also presented numerous ecchymoses scattered in its matrix. The membrane was examined in the fresh state as follows. Small bits were stained in lithio-picrocarmine and then allowed to soak in changes of iodised serum. They were then treated with a ¼ per cent. solution of perosmic acid and mounted on slides in iodised serum. From other pieces unstained fine sections, both horizontal and vertical, were made with the freezing microtome; these were stained in perosmic acid and mounted in Farrant's solution. Microscopic examination revealed some interesting changes. The walls of the smallest capillary blood-vessels were dotted over with numerous oil droplets and albuminoid granules darkly stained with the osmic acid, while the larger vessels showed adhering to their wall cells in a well-marked condition of granulo-fatty degeneration. These fatty cells corresponded either to the endothelium of the perivascular lymph-sheath or to the endothelium of the vessel wall. The muscle cells of the arterioles and small arteries were likewise fattily degenerated and, as seen in transverse or in longitudinal section, these latter vessels showed distinctly a considerably thickened wall. Another interesting feature was the irregularity in the lumen of some of the blood-vessels, which often ran a tortuous course. Here and there the lumen was quite dilated in a fusiform or globular shape and was distended with blood; in fact, quite aneurysmal in forms. Occasionally the perivascular lymph-sheath was found distended with red blood-cells and the extravasation was even extravascular. These blood extravasations into the fibrous matrix of the membrane were well demonstrated in successful transverse sections through an ecchymosed spot; and here, too, the connective tissue cells, as well as the flattened cells in the interfascicular lymph spaces of the lymph canalicular system, showed evidence of granulo-fatty metamorphosis, while other plasma cells contained granules of blood pigment. As regards the substance of the brain the cortex looked paler than usual, cloudy, and ill-defined, and there were scattered in its substance punctiform extravasations of blood. Microscopic examination showed pigmentary and fatty degeneration of the fusiform and pyramidal nerve cells as well as of the delicate neuroglia. As regards the basal ganglia—the corpus striatum and optic thalamus—there was nothing specially characteristic to note more than a general pallor and cloudiness of the grey matter, which seemed to have lost its lustre, so that the outlines of the nuclei were somewhat blurred and obscured. There was a greater quantity of fluid in the lateral ventricles, which seemed to be rather dilated. Still the changes just enumerated were too profound to be overlooked and they may explain to some extent the gravity of the cerebral symptoms owing to the disturbances in the nutrition of the brain for which these changes were responsible. I was not able to obtain portions of the nerve trunks supplying the left upper extremity for future examination as to evidences of neuritis.

With regard to the lungs, beyond œdema and hypostatic congestion of the bases there was nothing special to note. As to the heart, there was no enlargement, but the organ

was very soft and flabby and the left ventricular wall was quite lax and the cavity was somewhat dilated. The epicardium looked opaque and thickened in places and the endocardium and intima of the pulmonary artery and aorta showed a considerable degree of post-mortem staining. The muscle of the left ventricular wall was very soft and friable, of a pale reddish-brown colour, with slight yellowish and grey streaking. Under the microscope there was slight brown atrophy and also granular degeneration of the myocardium, while there was a distinct increase in the interstitial fibrous tissue. There were no valvular lesions. The liver was slightly enlarged, congested, and very soft and flaccid. On section the liver substance looked swollen, cloudy and opaque, and mottled with congestion and with shades of a greyish-brown colour. Sections examined under the microscope showed a slight degree of fatty infiltration of the peripheral zone, congestion and dilatation of the intercellular capillary spaces in the central zone of the lobules. The liver cells were swollen, much vacuolated, and likewise coarsely granular and fatty (osmic acid preparations). The stomach was empty, the gastric mucous membrane was coated with a gelatinous mucoid secretion, beneath there was both post-mortem staining and also ante-mortem congestion and ecchymosis; the rugæ were flattened. The mucous membrane of the intestinal canal was much congested in parts; the intestinal contents were a brownish liquid fæces in which mucous shreds and flocculi of mucus were mingled. The condition was that of gastro-enteritis. The spleen was enlarged, soft, and deeply congested. The kidneys were slightly enlarged; both were quite soft and flaccid. The capsules were slightly adherent in places. On section the medullary cones were purplish and deeply hyperæmic, the cortex looked swollen, of a pale brown or fawn colour, but variegated by a striated and punctiform congestion, and here and there showing a greyish yellow tint. Histological examination showed a well-marked parenchymatous nephritis. The tubuli contorti were blocked by swollen and granulo-fatty epithelial cells; in other tubules both in the cortex and medullary rays were found leucocytes and occasionally red blood cells, while others again contained here and there a hyaline or cellular cast. Another noticeable change was a general thickening of branches of the renal artery affecting the intima (endarteritis) as well as the muscularis and adventitia; the arterioles in the boundary layer also looked to be thickened. The fibrous capsule of the kidney was also irregularly thickened; there was thickening of the intertubular stroma. The uterus was enlarged to about the size of a large pear, the mucous membrane was thickened, soft and congested, and adhering to it were one or two coagula. It presented all the evidences of recent abortion, but otherwise the organ was quite healthy and nowhere either in its walls or around them was there the slightest evidence of inflammatory mischief.

Remarks.—My first acquaintance with mania as the result of lead-poisoning was made in Germany some fourteen years ago where I saw in an asylum at Dresden patients who had suffered from the effects of it. I met with other cases subsequently and only a year or two ago in the Potteries; and one of these cases is so similar in regard to symptoms and termination to this case that I will relate it. I was called to a middle-aged woman—an old and valued hand employed at one of the principal porcelain factories—who was said to have suddenly gone mad, after complaining a week or so of feeling unwell. I found her raving in a maniacal manner, struggling violently and held down by three or four women. There was an earthy pallor of the face, a well-marked blue line along the free border of the gums, offensive breath, furred and parched tongue, and as she had been working in lead in the glazing department I concluded that she was suffering from acute mania resulting from lead-poisoning. I obtained the assistance of a magistrate and the relieving officer, certified her, and she was removed straightway to the Stafford County Asylum, where she died, as I was informed, two days afterwards with much the same symptoms as the preceding patient.

In regard to the connexion of lead-poisoning with abortion I have heard of cases of miscarriage in women in the Potteries who became the victims of lead-poisoning. Some years ago the town of Sheffield was visited by an outbreak of lead-poisoning traced to the contamination of the water-supply, and I remember at the time it was noted that pregnant women who became affected either aborted or had a premature labour. I have reason to suspect that in this district the practice of taking diachylon in the form of pills to bring on miscarriage is far more prevalent among the working-class than is generally supposed. About eighteen months ago a patient came to me looking wretchedly ill, who admitted having taken diachylon for the purpose. After warning her of the serious consequences which might follow I prescribed for her, told her to go home and rest and call in medical aid if she became worse. From that day I saw no more of her. She miscarried, however, and afterwards became seriously ill and she was laid up for weeks with all the symptoms pointing to the poisonous action of lead—viz., gastro-enteritis and colic, maniacal delirium and slight epileptiform convulsions, intense headache with impairment of vision, and such prostration and weakness of the limbs, especially of the arms, that she feared she was going to lose the use of them. She was compelled to call in a medical man but refused to let them fetch me because I knew what she had been taking and "went on so to her about it." The medical man she did call in she tried to delude by ascribing her illness to a chill caught after miscarriage. And I have since been told of other cases where the victims of such folly have been ill for weeks after and have all but made a wreck of their lives. I have no doubt that not a few have been persuaded to take diachylon who would never have done so had they had any idea of its pernicious effects. I have heard of a case where a woman brought on not only miscarriage but following it also partial paralysis of an arm and hand, and this woman, after reading the account of the inquest, wisely exclaimed, "Never again." A friend of mine tells me of a case he saw in the out-patient room of one of the hospitals—a young woman with paralysis in one arm corresponding to the distribution of the ulnar nerve. She admitted having gone through a miscarriage a week or so previously. This is a case in which one may strongly suspect diachylon to have been the agent in effecting the miscarriage. In the light, then, of the present case I am sure the nature of some of the obscure nervous disorders, with the attendant anæmia, &c., in women who have admitted miscarriage—cases which now and then come under observation in the out-patient room—will be readily cleared up. During my tenure some years ago of the appointment of physician for out-patients to the Queen's Hospital in Birmingham I can call to mind such cases coming under my observation, the etiology of which was never satisfactorily explained simply by the fact of miscarriage. What may be the practical outcome of this case I must leave to the consideration of my readers. Diachylon is in almost every poor man's house; it is bought in the mass for the sake of cheapness and ostensibly for outward use only, though we know now to what terrible misuse its inward application has been put by some of the female community. It is, of course, generally used for cuts, sores, and spread on linen as plasters for drawing away the milk from the breasts after parturition. I regret that time and leisure have not given me the opportunity of looking up recent literature on the subject of lead-poisoning, but such as it stands and such as it came under my observation I have sent an account of this case in the hope that from a utilitarian point of view it may be considered worthy of being placed on record in THE LANCET.

Birmingham.

THE MEASUREMENT OF SUNSHINE AT OUR HEALTH RESORTS.

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DURING the last few years a good deal has been written in the pages of THE LANCET in favour of those health resorts which enjoy a good daily record of sunshine. We have heard much of the value of open-air treatment in many morbid conditions which combines the advantages of a pure air with a maximum of sunlight. "Insolation" is a comparatively new word, meaning the exposure of any given thing to the influences of the light of the sun. The sun both breeds life and kills it. Its influence on the great natural processes concerned in plant life has long been established and that it possesses an influence for good on animal life is also known, but in this case the *rationale* of

the process is not so well defined. In plant life, at any rate, the subtle changes which are brought about are due probably exclusively to the actinic rays of the sun and not to the purely luminous rays. The actinic rays are the chemical rays of sunlight which bleach and exert a reducing action, as in its effects upon the sensitised silver plate. Is the action similar on the hæmoglobin which by alternate and complete reduction and oxidation favourably influences the condition of the blood? Sunlight has a well-known inhibitory effect upon the life of pathogenic organisms, and Koch has shown that direct sunlight kills the tubercle bacilli in a few hours and not infrequently in a few minutes. This action is not fully understood, but here again it is probably due to the actinic value of sunlight in effecting some marked chemical change. Those familiar with the ordinary processes of photography know full well how great are the differences between the effects upon a sensitised film of diffused light and direct sunlight. In other words, moisture as represented in the clouds cuts off much of the actinic power of unobstructed sunlight. It is the same in the effect upon organisms, for whereas, as just stated, direct sunlight kills tubercle bacilli in a few hours or minutes, yet they will live for five or seven days under the influence of diffused daylight or daylight filtered of its active chemical properties by the interposition of clouds. Everybody knows the exhilarating effect of a burst of sunshine in the spring after a dull period in the winter. This effect is probably due not to mere luminosity but to an increased actinic action, a chemical action the precise nature of which we cannot explain but which all the same is very generally felt in the form of invigoration and in taking "a brighter view of things." Indeed, the phrase "a brighter view of things" did we but know refers probably not to luminosity but to an increased activity engendered by the hidden and unquestionable benefits of pure unsophisticated sunshine.

The sunshine recorded at a given health resort, statistics of which of different places have appeared from time to time in the pages of THE LANCET, has hitherto related almost exclusively to its duration. The intensity of the heat may even be recorded, but the intensity of the light, especially in regard to its actinic value or chemical effects, has been hitherto ignored. To me this appears an important omission if we take as our postulate that it is the actinic rays of the sun, and not the luminous rays, which are responsible for biological action. It is certainly so in plant life and we may assume therefore that it is so in animal life. The duration of sunlight is admirably recorded by the Jordan's Recorder, but not for any practical purpose its intensity. Another sort of record may also be obtained by means of the burning effects of the sun, but this again is not an index of its chemical intensity.

At the meeting of the British Association held in Nottingham in 1893 Dr. S. Rideal communicated a very interesting paper on the Iodine Value of Sunlight in the High Alps. This seems to me to be a method depending essentially upon the actinic value of sunlight since a chemical change is produced and the amount of resulting products of the reaction may be easily estimated. The process depends upon the fact that sunlight liberates iodine from an acidulated solution of potassium iodide. The method is briefly as follows. A solution of potassium iodide is made up containing 20 grammes of the salt per litre. Likewise a solution of diluted sulphuric acid is prepared containing 11·9 grammes per litre of the pure acid. Lastly, 0·39 gramme of pure powdered arsenious acid is dissolved in a little water containing 1·5 gramme of potassium bicarbonate and then made up to a litre. In the following experiments 10 c.c. of the potassium iodide solution, together with 10 c.c. of the dilute sulphuric acid, were placed in a stoppered bottle of 50 c.c. capacity and placed upon a white porcelain plate and exposed to the action of the light. At the end of an hour the bottle is removed and bicarbonate of soda added in sufficient quantity to neutralise the free acid present. The bottle is next placed under a burette containing the arsenic solution. The latter is then run in until the colour of the iodine is completely discharged. I have employed this process (which is a slight modification of the method carried out by Dr. Rideal in the Engadine) at Llangammarch Wells, Central Wales, at different periods of the year and in some instances experiments were also conducted in London at the same time.

The following tables (I., II., and III.) are a synopsis of the results obtained at Llangammarch Wells of exposure of an acidified solution of potassium iodide to sunlight. The results are given in milligrammes of iodine liberated per 100 c.c. of solution used, each exposure beginning at about the hour named below and lasting for one hour. The Roman numerals indicate the hours. In practice 20 c.c. of the equally mixed solutions were used and by multiplying by 5 the results are recorded per 100 c.c.

TABLE I.—*Results of all Observations—i.e., Bright Sun, Medium and Cloudy.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	10	9	7	4	8	7	4	4
Mean number of milligrammes of iodine liberated	13·0	12·0	13·9	15·0	10·3	14·0	13·3	10·0

TABLE II.—*Results of Observations when the Sun was Shining Brightly for One Hour.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	4	1	3	1	2	2	3	1
Mean number of milligrammes of iodine liberated	15·0	14·0	14·75	15·0	17·7	17·7	13·5	11·0

TABLE III.—*Result of Observations when the Sun was Completely Clouded for One Hour.*

Hour	IX.	X.	XI.	XII.	I.	II.	III.	IV.
Number of observations	1	2	0	0	2	2	0	1
Mean number of milligrammes of iodine liberated	4·0	10·7	—	—	8·12	9·25	—	3·0

These observations were made during the period between May 25th and June 15th, 1897, and were undertaken with the view of ascertaining the variations in one place due to uninterrupted sunlight, cloudy intervals, and an entirely dull day. Two important deductions follow from these interesting records. On a day when the sun was shining brightly and continuously the maximum chemical or actinic effect occurred between one and two o'clock. In the case when the sun was completely clouded the results at the same time of the day showed about one-half of this chemical activity. The information gained in these experiments led me next to try the differences between the sunlight at Llangammarch Wells and at London on the same days. The results were as follows:—

TABLE IV.—*The Sunlight of London compared with that of Llangammarch (Summer).*

Date.	Hour.	Milligrammes of iodine liberated per 100 c.c.		Weather observations.	
		London.	Llangammarch.	London.	Llangammarch.
Sept. 10th, 1897.	IX.	—	12·25	—	Bright, sunny.
	X.	—	11·50	—	Bright, with cloudy intervals.
	XI.	3·0	14·50	Alternate sun and cloud.	Alternate sun and cloud.
	XII.	5·5	14·75	Ditto.	Bright, sunny.
	I.	7·0	13·5	Sunny, with cloud.	Alternate sun and cloud.
	II.	5·0	11·25	Ditto.	Bright, with cloudy intervals.
	III.	4·0	8·05	All sun.	Occasionally bright sun; otherwise cloudy.

It will appear, therefore, that the conditions being the same the sunlight in London has nothing like the actinic power of the sunlight at Llangammarch Wells, and probably at other places situated under a similarly pure environment.

The transparency of the air is, of course, the most important factor to be taken into account. In London the air is seldom transparent in the same sense that the air in the country or in Wales is transparent. Llangammarch in particular is situated in a charming part of the country and is sheltered from adverse winds amongst mountain scenery and is very remote from manufacturing centres. On the other hand, London is hemmed in by factories and other places which load the air with dust or smoke, which have a great effect in absorbing the actinic power of the sun's rays. It happened in London within a fortnight of these experiments to be foggy. The first fog, indeed, of the autumn of 1897 occurred on Sept. 27th. The fog was low-lying and the sun could be seen shining through the gloom. A bottle containing 20 c.c. of acidified potassium iodide was exposed from 11 A.M. to 5 P.M., that is, just six hours, with the result that the iodine liberated per 100 c.c. was only 0·5 milligramme or 0·08 milligramme per hour. This is a striking instance of the remarkable effect which fog has of absorbing practically all the actinic rays although light rays still penetrate.

The next experiments were conducted in the winter and fortunately again I was able to carry out similar experiments in Llangammarch and at the same time in London. The results over four days were as follows :—

TABLE V.—*The Sunlight of London Compared with that of Llangammarch (Winter).*

Date.	Hour beginning.	Milligrammes of iodine liberated per 100 c.c.		Weather observations.	
		London.	Llangammarch.	London.	Llangammarch.
Feb. 14th, 1898.	XI.	3·5	8·5	Sunshine, hazy.	Bright sun at intervals.
	XII.	5·0	7·5	Sunshine, bright.	—
	I.	5·0	9·0	,,	—
	II.	2·5	8·0	,,	—
Feb. 15th, 1898.	XI.	1·0	4·0	Dull; cloudy all day.	Fine rain all day.
	XII.	2·5	3·0	—	—
	I.	1·0	2·5	—	—
	II.	1·0	2·0	—	—
Feb. 16th, 1898.	XI.	5·0	2·5	Bright sun.	Cloudy all day.
	XII.	4·5	3·0	,,	—
	I.	6·0	2·0	,,	—
	II.	4·0	2·0	,,	—
Feb. 17th, 1898.	IX.	—	5·0	Dull; cloudy and dark.	Sun at first, then rain.
	X.	0·5	4·75	—	—
	XI.	0·5	2·0	—	—

Here also will be remembered the great superiority of the sunlight at Llangammarch in winter time when the conditions were meteorologically the same. Thus the maximum amount of iodine liberated in one experiment at Llangammarch was 9 milligrammes, whilst the maximum in London under the same conditions was 6 milligrammes. In both cases it will be observed that the maximum occurred at the same time between the hours of 1 and 2 o'clock. When it was cloudy all day at Llangammarch the activity of the light was always more than twice that in London under the same conditions.

I have already referred to Dr. Rideal's experiments on the iodine value of sunlight in the high Alps. His results were contained in the British Association Reports, 1893, at Nottingham, and 1894 at Oxford. He found at St. Moritz that the average amount of iodine liberated was 9·34 milligrammes per 100 c.c. per hour. The maximum hour value was 13·5 milligrammes on Jan. 1st, 1893, and the lowest was 5·7 milligrammes on the 24th of the same month. In the Grindelwald the average was 8 milligrammes per hour. In 1893, from Dec. 6th to Feb. 28th, 1894, the maximum at St. Moritz was 14·52 milligrammes per hour, the lowest value on Dec. 9th was 3·53 milligrammes, and the average value for the period was 7·05 milligrammes.

I venture to think that these results are very instructive and interesting since they show that at any rate at Llangammarch, and doubtless at other home health resorts, the power and activity of the sun even in the winter is in no sense inferior to that which falls upon the health resort of very high altitudes like the Grindelwald at St. Moritz. After all, the effect of sunlight must be largely determined by the purity of the air and a measure of the actinic value of sunlight must therefore be to some extent a measure of atmospheric purity. The mountainous districts at home, though not of the scale abroad, are notorious for the crystal transparency and clearness of the air, and the experiments I have made at Llangammarch Wells have given results which are by no means disappointing, but which, on the contrary, show that as regards open-air treatment and exposure to a sunny air we may count upon certain of our health resorts at home as providing conditions of an equal value with those in certain places abroad. Some pertinent remarks of Professor von Ziemssen are quoted by Dr. Arthur Ransome in an article in THE LANCET of June 11th, 1898, especially in regard to the treatment of patients at high altitudes. Professor von Ziemssen concludes that the only advantages in favour of mountain climates are "the pure dry air, the slight wind in winter." He then points out the disadvantages of treatment at high altitudes. Marked atmospheric changes occur not infrequently (wind, rain, and snow) and are injurious to the patient. They make the acclimatisation of many patients difficult, and patients with high temperatures (especially those who do not reside in the sanatoria) may become decidedly worse. Other objections are the wearisome journey, with all its bad effects, the separation from the family, the comfortless conditions in severe illness and in case of death; further, the financial anxiety and the economy necessitated. All these have a bad effect upon the patient. When the advantages and disadvantages are compared the former are not so clear as to indicate the unconditional recommendation of treatment at high altitude. The long journey from England is frequently undertaken with great distress to the patient.

It seems to me that the medical profession in England have been somewhat behind their continental brethren in bringing forward the probable advantages of our own health resorts. The experiments I have here recorded appear to me to encourage the belief that, after all, we possess health resorts at home which show equal advantages in regard to purity of air and sunlight, and both these are admittedly important factors in the treatment of disease. I hope the publication of this paper will induce others to adopt this method and report the results at other places. Certainly the results obtained at this health resort (Llangammarch Wells), which, according to the indications of the method employed enjoys the purest of air and the maximum life-giving properties of the sun, are calculated to justify such a step.

Llangammarch Wells.

THE PREVENTION OF TUBERCULOSIS.

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THE new society so auspiciously started in embryo on June 22nd at the meeting at Sir William Broadbent's residence will have many matters to attend to. I may perhaps be permitted here to refer to a few of them.

The spread of tuberculosis depends mainly on two factors: on constitutional deterioration largely due to lack of fresh air and on infection. It can therefore only be successfully combated by educating the public in hygienic methods. Houses are on the whole better drained than formerly, but it is by no means certain that they are better ventilated. Many shops are being reconstructed with absolute disregard for ventilation. Scarcely an office in London keeps its windows sufficiently open, even in summer, and no doubt largely because of the imperfect enforcement of the Smoke Acts. But for this, out-door restaurants might flourish in London as they do in Paris, Stockholm and Copenhagen. Even medical men often fail to appreciate the dangers of vitiated air and are deeply impressed with the risks of open windows in early phthisis. It is quite hopeless to prevent the spread of tuberculosis without at the same time improving our organisation for its treatment. Phthisis is curable by combined medical and hygienic

treatment provided this be applied early and persisted in. Hygienic treatment is almost impossible so long as the conditions of home life are unaltered; and yet the poorer phthisical patients are treated for many months as out-patients before being admitted for a short time to a special hospital, after which it is a matter of pure chance what becomes of them. No doubt this arises partly from insufficient beds, but proper training in open-air methods is impossible in most of our chest hospitals owing to their position, so that instead of largely increasing the hospital accommodation in towns it would be more sensible to organise a series of sanatoria in the country under medical supervision. Such sanatoria have a most important educational value; for with a resident medical man there is a good chance of directing the daily life of the patients into proper hygienic channels. The convalescent homes as at present managed cannot take the place of such sanatoria, although some of them might well be converted to such a purpose. A patient of mine who is now phthisical had severe pleurisy following influenza eighteen months ago, which was apparently the beginning of his illness. After this attack he went to a convalescent home and lodged in the same room with a freely expectorating phthisical patient. No special precautions were taken concerning the sputa, which were cleared away by the visitors themselves. Comment is needless.

It is still the custom in hospitals for disease of the chest to lodge the subjects of heart disease, chronic bronchitis, and early and late phthisis in the same ward. With proper care there is little danger of infection; but such mixture of cases renders the hygienic treatment of early phthisis impossible. Hospitals for phthisical patients should receive them only until they can be transferred to country sanatoria, where all early cases should be received under medical control. When convalescent these should be passed into country colonies, suitably arranged for an open-air life and still more or less under medical supervision. Advanced cases should go to special homes or refuges. By such an organisation there would be a good chance of recovery for early cases and the public would be protected. If at least two years are needed in Colorado or the Alps a few months cannot be sufficient in England.

In France there is an admirable organisation for the treatment of phthisical children, who are sent from a well-arranged dispensary in Paris to one of two country sanatoria, and go thence when convalescent to one of several agricultural colonies to learn a trade which keeps them healthy. In Germany there are over 20 country sanatoria for poor phthisical patients, mostly supported by the sickness and old age insurance companies, who find it cheaper to restore their insurers in an early stage than to give sick pay when they are no longer able to work. As I have already described the treatment in these sanatoria[1] I need only repeat that they constitute a most important means of preventing the spread of tuberculosis.

Welbeck-street, W.

TWO INTERESTING CASES OF OVARIOTOMY.[2]

BY H. MACNAUGHTON-JONES, M.D., F.R.C.S. IREL. & EDIN.

CASE 1. *Large malignant ovarian tumour and smaller anomalous ovarian tumour removed from a patient supposed to be pregnant; recovery.*—The patient was a woman, forty-two years of age, who had had five children. Her last labour occurred in September, 1894, and her last catamenial period was in April, 1897. She had been a widow since November, 1897. The last marital act took place in September, 1897. I learned that pregnancy was suspected and that an anomalous gestation was surmised. There had been occasional attacks of diarrhœa and some sickness for the past six months. I saw the patient on May 28th, 1898. I found her greatly emaciated and very weak. The abdomen presented the shape and character generally seen with ovarian cystoma. On examination I found the skin tightly stretched over a large solid mass of stony hardness; this was moveable and appeared to be lobulated, while a sulcus to the left side seemed to divide it from a second mass occupying the left inguinal region. I could disassociate the uterus from the tumour or tumours; the cervix was very hard and there was an associated movement of the uterus. I arrived at the conclusion that there were no products of conception and that the mass was ovarian, and Mr. Bland Sutton, who saw the tumour before operation and was present when I removed it, considered that it was malignant—a view which I shared with him. The tumour gave the idea of a hard multiple fibroma. I operated on May 31st. On opening the abdomen by an incision which had to extend from a short distance below the ensiform cartilage to the pubes a quantity of ascitic fluid escaped. The large mass was easily delivered and the thin pedicle secured. The second (left) tumour was then removed and the pedicle dealt with. The only complication (which was a serious one for some time) was a return of diarrhœa which was most difficult to control and made the administration of nourishment also difficult. However, the patient left the home one month after the operation greatly improved in health and is now at the seaside. How emaciated she was before operation may be judged from the fact that she weighed 6 st. 5 lb. before leaving.

Mr. J. H. Targett reports the specimen as "a large solid tumour of the ovary with a portion of the adjacent broad ligament. The tumour measures 9 in. by 6 in. by 5 in. and its outline is lobulated and coarsely nodular. The surface of the tumour is smooth and free from adhesions. On section it is white, mottled with yellow and grey areas, and near its outer pole there is a cavity of the size of a hen's egg due to degeneration of the growth. The tissue surrounding this cavity is blood-stained and evidently necrotic. Some small thin-walled cysts containing clear fluid project from the surface of the tumour. The pedicle measures 3 in. in breadth and the Fallopian tube and mesosalpinx are œdematous, but otherwise normal. Histologically the growth is a scirrhous carcinoma."

Mr. J. H. Targett reports: "The small tumour is solid, pyriform in shape, and measures 4 in. by 2½ in. It has a somewhat nodulated exterior. The cut surface shows a rounded gelatinous area in the broader end of the tumour. This area measures 2½ in. in diameter and is fairly well defined. The rest of the tumour is fibrous and traversed by large thin-walled vessels. The gelatinous area is not quite homogeneous in appearance, the peripheral zone being more gelatinous than the rest. The Fallopian tube and mesosalpinx are normal. Histologically the tumour very closely resembles the specimen recently exhibited at the Obstetrical Society of London and referred to a special committee."

[The tumour referred to by Mr. Targett as bearing a resemblance histologically to the smaller tumour removed from Case 1 is one a section of which was reported on by a special committee to the Obstetrical Society of London as an adeno-fibroma, and was removed by me with a large fibroma of the uterus.]

CASE 2. *Semi-solid ovarian tumour with ascites; ovariotomy after general peritonitis which was followed by universal adhesions; recovery.*—The patient, who was forty-six years of age, had had four children. Her last pregnancy occurred in 1894 and her last catamenial period was in 1895. With regard to her history I saw this case with Dr. Disney on May 13th, and he gave me these facts: "I was called to see the patient for the first time on April 21st. She was complaining of slight pains in the abdomen, and having for the past five months increased greatly in size believed that she was in labour. I found a tumour inclined towards the left side; there was no fluid then and the temperature was 99° F. During the day the pain increased and at 11 P.M. I found a considerable amount of swelling; the temperature was 102°. The next day there was evident general peritonitis and the temperature was 104°. On the 23rd she nearly collapsed. This critical state lasted about four days, the temperature ranging between 103° and 105°. There was absolute constipation between April 20th and May 1st despite many remedies. Then the bowels acted naturally. From April 27th there was gradual improvement and by May 1st the temperature was 101° and did not become normal till May 11th. There was a great amount of swelling, and pain on pressure all the time. She was out of bed for the first time on May 14th and was removed for operation on May 19th." I agreed with Dr. Disney that immediate operation was the

[1] THE LANCET, Aug. 14th and Nov. 20th, 1897; Practitioner, June, 1898.

[2] A paper read before the British Gynæcological Society on July 14th, 1898

only means of saving her life. The patient was then suffering from occasional attacks of pain and was kept under the influence of morphia. She was in an extremely enfeebled condition, so much so that the question of removal had to be anxiously considered. On the 21st I operated. The patient was so feeble that she could not stand; she was greatly reduced and, further, a very rapid and feeble pulse made me anxious about the anæsthetic. This, however, as in the last case, was most admirably administered by Dr. R. T. Bakewell, to whom and to Mr. Sutton, who assisted me in the operation, I feel specially indebted. On opening the abdomen the parietal peritoneum was found completely adherent to the large cyst wall; this was so to its entire extent. The pedicle was completely twisted. This I carefully detached all round before using the trocar and when the cyst had collapsed the bowel was found in various places adherent in festoons to the posterior surface of its wall; in fact, considerable loops of intestine were attached and had to be carefully peeled off, the vessels, where necessary, being ligatured. When all bleeding was arrested I inserted a drainage-tube. This I removed on the fourth day and the patient went to the seaside on June 15th. The recent attack of severe general peritonitis, the universal adhesions, the very enfeebled state of the patient at the time of the operation, and the importance of rapid operation before these adhesions had become stronger are the principal points of interest. Had the operation been delayed its performance, in my opinion, would have been impossible.

The specimen Mr. Targett reports as "a multilocular ovarian cyst, consisting chiefly of one large loculus with imperfect septa. The whole specimen is of about the size of an adult head. The pedicle appears to have been twisted and the surface of the specimen was universally adherent. The mesosalpinx was completely adherent to the cyst wall; the Fallopian tube was normal. There is no evidence of malignant disease."

Harley-street, W.

A CASE OF DEATH UNDER CHLOROFORM, WITH REMARKS.

BY ALEXANDER WILSON, F.R.C.S. ENG.,
SENIOR ADMINISTRATOR OF ANÆSTHETICS, ROYAL INFIRMARY, MANCHESTER, ETC.

THE following unfortunate fatality belongs to that class of chloroform accidents in which the respirations continue after cessation of the pulse. As I have previously endeavoured to show,[1] the symptoms in these cases indicate that the primary lesion is a paralysis of the circulation, and the respiratory centre is affected as a secondary consequence and succumbs from simple anæmia. The first warning of danger is a change in the circulation, manifested by pallor and a feeble pulse. There is no gradual paralysis of the respiration but, on the contrary, a misleading increase in the frequency and depth of the respirations, followed by incoördinate respiratory efforts which gradually cease. The important and notable point is that effective respiration persists at a time when no pulse can be felt, and respiratory movements may be present when the circulation is damaged beyond recovery.

The patient, a boy, aged fifteen years, was being anæsthetised with chloroform preparatory to the removal of a necrosed metatarsal bone. I was not present at the commencement of the administration, being occupied in the adjoining operating theatre, but I saw the patient the moment dangerous symptoms supervened. Chloroform freely diluted with air was administered from a small square of folded lint. During the stage of excitement there was some struggling with holding of the breath, during which the lint was withdrawn from the face. Suddenly the patient began to breathe deeply and he became pale; the pupils were widely dilated and no pulse could be felt. The head was immediately lowered, the tongue was drawn out, and vigorous artificial respiration was begun. Called in from the next room, I found the boy lying on his back with the head and chest hanging over the side of the couch; the tongue was being held out with forceps and artificial respiration by compression of the chest was being employed. The cheeks and lips were of a good red colour, which returned slowly after pressure, but much more slowly than would have been the case had the rich colour been due to a vigorous circulation. The most dependent part of the forehead and the tips of the ears were just beginning to show a faint dusky hue. The pupils were of medium size, if anything a little contracted; there was no corneal reflex in either eye and the eyeballs in tension were about normal. There was no trace of pulse in either the facial, temporal, or carotid arteries. The patient was taking deep gasping respirations at intervals of from four to five seconds, and air was freely entering the chest. This fact was made quite clear on suspending the artificial respiration. Vigorous compression of the chest was continued, the body was alternately laid flat and semi-inverted, hot sponges were applied to the cardiac region, the limbs were rapidly and tightly bandaged, a tight bandage with a pad was placed round the abdomen, and a copious warm enema of brandy-and-water was given, &c. The respirations from being full and free soon came at longer intervals and were more of a gasping nature, degenerating rapidly into mere incoördinate respiratory efforts and ultimately ceasing. The rosy colour of the cheeks, present in the semi-inverted position, almost entirely disappeared when the head was raised, to return again on the resumption of the dependent position, but each time to a less degree as the blood became more and more venous, until the aspect at length became corpse-like. The pupils were widely dilated and it was evident that the lad was quite dead. The post-mortem examination threw no light upon the causes which led to the fatal result.

This case illustrates the futility of trusting to any one isolated sign in estimating the effect of an anæsthetic. Thus any observer, judging solely from the general appearance of the patient, the evident vitality of the respiratory centre, the good colour of the cheeks, and the undilated pupils, would have concluded that there was no danger. Yet when viewed in conjunction with the absence of the pulse these very symptoms, in themselves favourable, become symptoms not only of the gravest import but actually signs of dissolution. The exaggerated respirations, accompanied with pallor and an imperceptible pulse, indicated a failure of the circulation so serious as to induce anæmia of the respiratory centre—a condition which only occurs in fatal hæmorrhage or fatal failure of the circulation from other causes. The red, apparently healthy hue of the cheeks, under ordinary circumstances an indication of vigorous circulation, in this case succeeding to the previous pallor on inversion of the patient and being present in a pulseless subject showed merely how absolute was the paralysis of the circulation. It proved that the blood-vessels had in effect become inert tubes, in which the blood, no longer propelled by the heart or restrained by the arterial tone, was under no influence save that of gravity, and free to flow to any part according to the position of the body.

In this case, as in others of the same type, there was no sign whatever of respiratory paralysis in the ordinary acceptation of the term. The respirations and respiratory movements persisted long after cessation of the pulse, until the respiratory centre succumbed from exhaustion, as it does in death from hæmorrhage or in any sudden failure of the circulation. Judging from the invariable effect of chloroform on the blood-pressure, the primary lesion was no doubt a paralysis of the vasomotor centre. The practical point is that in these cases the first warning of danger is exhibited by a change in the circulation, shown by pallor or lividity of the face and alterations in the pulse. If there have been no struggling and holding of the breath and the blood is well aerated the failure of the circulation will leave the face deadly pale. Should there have been struggling, &c., and defective aeration of the blood the face will become livid. The pulse, could it be carefully observed throughout, would at an early stage show some sign of the fall in blood-pressure. It first becomes soft and compressible and quick—"a running pulse"; then it suddenly collapses, the beats coming slower and irregularly trickling under the fingers like a very slow aortic pulse. I have repeatedly noticed this latter condition and by treating it have been able to ward off more serious danger. The respirations, as already pointed out, undergo marked modification in becoming suddenly accelerated, but only at a comparatively late stage when the mischief is often beyond repair. It cannot be too much insisted upon that as the

[1] The Mechanism of Death under Chloroform, THE LANCET, Nov. 17th, 1894, and Sept. 11th, 1897.

primary lesion is in the circulation to the circulation must we look for the first signs of danger and to the improvement of the circulation must treatment be directed. If the case is left until the stage of deep respiration is reached recovery is almost hopeless.

As regards treatment the indications are obvious, but the application of remedies is difficult. We are dependent upon the circulation for the conveyance of remedies to the various organs, and in these cases, as a rule, by the time the danger is noticed there is practically no circulation. Hence all remedies requiring conveying by the blood, such as hypodermic injections, rectal injections, &c., have very little chance of reaching the organs which they are expected to influence. The indications for treatment are to raise the blood-pressure and to stimulate the heart and supply it with blood upon which to contract, while at the same time the flow of blood to the nerve centres should be facilitated. This is best done by mechanical means, which in extreme cases are the only ones possible of efficient application. Thus artificial respiration by vigorous compression of the chest both raises the blood-pressure and stimulates the heart and is the only really useful remedy. Bandaging the limbs and compressing the abdomen help by limiting the area of the circulation. Transfusion if performed quickly might also be of some use. Dr. Leonard Hill has pointed out the influence of the position of the body on the heart, which treatment being easy of adoption is well worthy of trial.

As regards drugs, Professor Schäfer, Dr. H. L. Barnard, and Mr. F. Hobday[2] have recently drawn attention to the stimulating effect on the circulation of nicotine, extract of suprarenal capsules, hydrocyanic acid, and ammonia. All these possess the disadvantage that to be useful a fair degree of circulation must exist. Probably, from the mode and facility of administration, the most efficient will prove to be ammonia given by inhalations, as suggested by Dr. Barnard, and exhibited at an early stage before the respiration is altered or the circulation is completely paralysed. In my own experience I have found on several occasions in which the circulation showed the signs of failure previously mentioned that compression of the chest was enough to tide the patient over the danger.

Manchester.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib iv. Procemium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

A CASE OF INTUSSUSCEPTION OF THE CÆCUM; REDUCTION AFTER LAPAROTOMY; RECOVERY.

(Under the care of Dr. F. G. PENROSE and Mr. T. H. KELLOCK.)

THE following very interesting case shows that under certain circumstances an intussusception may exist for three weeks and yet so few adhesions may have formed that the intussuscepted bowel may be withdrawn with comparative ease. The chief circumstance which renders such a thing possible is the fact that the large bowel is the portion of intestine mainly concerned as in this case. The interference with the circulation of the invaginated bowel was but slight and this was shown by the absence of blood from the stools and by the non-formation of peritoneal adhesions. The case is another confirmation of the advisability of performing laparotomy as soon as a patient comes under observation, for it cannot be doubted that in a short time the obstruction to the circulation of the intestine would have increased and it would have been impossible to release the bowel. Dr. Penrose and Mr. Kellock are to be congratulated on the successful termination of the case. For the notes of this case we are indebted to Dr. G. F. Still, medical registrar to the hospital.

A male child, aged sixteen months, was admitted to the Hospital for Sick Children, Great Ormond-street, on Feb. 9th, 1898, on account of pain in the abdomen. He was the youngest of three children; one of the others had died from enlarged head and spleen and the third was alive and well. There was a history of phthisis on both sides of the family. The patient was a full-term child, apparently quite healthy at birth; he was brought up on the breast alone until he was eleven months old, when he was given cow's milk, puddings, bread, &c. The bowels had always been regular, but the motions were sometimes slimy and offensive. He had had no serious illnesses but he had not appeared to thrive since the time when he was taken from the breast. In August, 1897, he was unconscious for a few minutes after a fall and in September he had discharge from both ears for three or four days. Three weeks before his admission to the hospital the mother noticed that the child had pain in the abdomen which came on suddenly, causing him to roll about and double himself up; this lasted for some hours, and since then these attacks of pain had occurred at least once a day and had been accompanied on three occasions by vomiting. The attack for which he was admitted had been more severe and had lasted longer than any of the previous ones, and during it he had vomited green fluid six times. There had been no blood noticed in the stools or any straining. On admission to the hospital the child was well nourished; he was strikingly apathetic and listless, even rectal examination failing to make him cry. The expression of the face was not at all suggestive of any serious abdominal condition; he lay quietly with the legs flexed on the abdomen, which was not distended or tender and moved well with respiration. In the left iliac fossa a sausage-shaped tumour was felt lying in the direction of the descending colon and reaching to just below the anterior superior spine of the ilium; the tumour was very hard and somewhat irregular in outline, the hardness varying during examination. A less defined tumour of the same shape could be traced as a continuation of this upwards to the left hypochondrium, across the epigastrium about two fingers' breadth above the umbilicus and curving downwards to the middle of the right lumbar region, where it was lost; the right iliac fossa appeared to be more empty than normal. The rectum was found to be partially filled with semi-solid fæcal matter; no tumour could be felt there, but a little blood came away on the examining finger. The heart and lungs were normal. The temperature was 99·8° F. and the pulse was 144. The child was noticed to assume the genu-pectoral position, to which he immediately returned if disturbed. On the evening of the day of admission, chloroform having been administered, the abdomen was opened by a 4-in. incision commencing 1 in. above the umbilicus. There was a little fluid in the peritoneal cavity but no peritonitis. The small intestines being kept from protruding by a flat sponge two fingers were introduced and the tumour was easily found lying on the left side. It was extremely hard and was evidently an intussusception which reached the descending colon. The greater part of it was easily reduced by the two fingers assisted by manipulation from the outside and without bringing the tumour out of the abdomen. It was found, however, that the last three inches or so could not be reduced in this way, so this part was brought out of the wound and reduction was effected with some difficulty, the walls of the gut being very thick and hard. The intussusception was found to be one of the cæcum into itself; the last part to be reduced was that which had formed the apex. The vermiform appendix had practically no mesentery; it was slightly swollen, as also were some lymphatic glands near its base. When once reduction was complete there was no tendency for the invagination to return. The bowel having been returned the abdominal wound was completely closed. The child bore the operation well and slept fairly after a small dose of morphia had been given hypodermically. The temperature on the following morning was 103·8°, but it fell steadily and was normal on the third day. Thirty-six hours after the operation the urine was found to be strongly ammoniacal and of a dark green colour; this condition, however, disappeared during the day and with this exception recovery was uninterrupted. For some days the œdematous cæcum could be felt as a hard tumour in the right iliac fossa, but it gradually became smaller and softer. The wound healed by first intention; the

[2] THE LANCET, Jan. 1st, 1898.

stitches were removed on Feb. 24th and the patient left the hospital convalescent on March 2nd. The child has been seen once or twice since his discharge and continues to be in perfect health.

Remarks by Dr. PENROSE.—It appeared from the examination that there could be but little doubt as to the nature of the tumour. As the history was perfectly definite that the infant had been ill for three weeks I thought it advisable to call in the aid of one of my surgical colleagues immediately. The apex of the cæcum as the starting point apparently of the invagination is certainly unusual.

Remarks by Mr. KELLOCK.—The points worthy of remark in the above case seem to be as follow: 1. The nature of the intussusception, which was of a somewhat rare variety. 2. The ease with which after three weeks' duration the greater part of the intussusception could be reduced and that too without bringing the bulk of the tumour outside the abdomen. This fact, together with the possibility in this case of preventing the protrusion of any small intestine, must have minimised the shock which is a necessary accompaniment of an operation of this kind on a young child. 3. The occurrence of carboluria thirty-six hours after the operation. No carbolic acid having been introduced into the abdomen the only possible source of the condition was the dressing applied to the wound, for which double cyanide gauze wrung out of a 1 in 40 carbolic acid solution was used; it was, however, very transitory and appeared to do the patient no harm.

BULAWAYO HOSPITAL.

A CASE OF ABSCESS OF THE LIVER; OPERATION; RECOVERY.

(Under the care of Dr. FRANK ARNOLD.)

THIS is a good example of a "tropical" abscess of the liver in which the connexion between the disease and an attack of dysentery was very close. The operation of transpleural hepatotomy was much simplified by the pleural and peritoneal adhesions which had formed.

A man, aged twenty-two years, was admitted into the Bulawayo Hospital on Jan. 19th suffering from a first attack of dysentery. He had resided for five months in Bulawayo, he had not been to any outlying district, and he had gone direct from England, staying for five weeks at Cape Town on the way. On Feb. 6th he was discharged from the hospital, relieved of, but not quite free from, dysentery. On the 18th he was readmitted to the hospital, his dysentery having become subacute. For about 7 or 8 days after admission his bowels were moderately loose, the number of motions varying from 1 to 10 in the 24 hours. There were no rigors and vomiting was absent except on the exhibition of quinine; night sweats were profuse and exhausting; the appetite even for liquid diet was small. The temperature on the night of admission was 99° F. It fell the next morning to 96°, but rose again the same night to 102°. For the next six days the temperature remained high, rising in the evening to between 102° and 103° and falling in the morning to not below 100°. On the morning of the seventh day after admission the temperature was normal but rose again the same evening to 101° and from this date onwards to the time of operation the difference between the morning and evening temperatures was well marked; at night records of from 102° to 103° were the rule and in the morning a subnormal reading was invariable. On the ninth day after admission pain diffused over the liver area was first complained of and continued up to the date of the operation. This was not severe; no appreciable enlargement of the liver could be made out. It may be noted that the appearance of this pain was synchronous with the change in the temperature curve—namely, the more marked difference between the morning and evening readings. The patient's condition now remained almost stationary up to about March 3rd, when the pain in the liver became more marked and examination of that organ showed that enlargement was now appreciable, the lower border extending in general to about 1½ in. below the costal margin. The whole liver area was tender and especially was this the case with a marked enlargement to the inner side of the gall-bladder. Into this especially tender part the needle of an exploring syringe was introduced with a negative result. After a day or two the local symptoms became less severe and the liver area receded. On the 10th pain in the right shoulder over the supra-spinous area of the scapula was first complained of. On the 18th the patient's general condition was very much worse, he had wasted considerably; his persistently high temperature, night sweats, increased pulse rate, and sallow tinge of skin, all pointed to the presence of pus under pressure with consequent septic absorption. Accordingly the liver was again carefully examined and it was found that the area had diminished, the lower edge being about ¾ in. below the costal margin and the part to the inner side of the gall-bladder being less prominent and less tender. However, in the eighth intercostal space in the mid-axillary line a tender area of about the size of a half-crown was noticed; there was no bulging here, the skin was not red or œdematous, and no dilated cutaneous veins could be seen. On the 19th the needle of an exploring syringe was inserted at this spot and at a depth of 1½ in. pus of a creamy colour and thick consistency was reached. Microscopic examination of this pus showed nothing peculiar; no amœbæ could be seen. On March 21st Dr. R. T. Michell, surgeon to the British South Africa Company's Police, kindly gave chloroform. Resection in the usual way of 1½ in. of the ninth right rib in the mid-axillary line was performed and on cutting through the remaining soft structures the finger could be passed into the pleural cavity upwards for about 1½ in. and at this height the edge of the lung fixed by adhesions could be felt. There was no indrawing of air into the pleural cavity. The diaphragm was next cut through and a space could be felt between the liver and the diaphragm, but the apposition of these was unusually close, and it seemed to be probable that the previously mentioned tenderness of the liver had been a localised peritonitis uniting that organ to the diaphragm. The patient's condition both before and during the operation was too serious to allow of either a prolonged manipulation or the division of the operation into two stages. It seemed reasonable to conclude that between the external skin and the liver there existed a small pleural and a small peritoneal sac shut off from the general cavities. After ascertaining that the abscess had been correctly localised by means of an exploring syringe the liver was freely incised and about 6 or 7 oz. of thick pus free from smell were evacuated; the thickness of liver substance cut through was about ¾ in. On passing the finger into the abscess cavity it was found to be situated in the lower part of the right lobe, single, spherical, non-loculated, and of about the size of a small orange. The cavity was douched out with a warm solution of boric acid and Condy's fluid, a large drainage-tube was inserted, and a wood-wool pad, &c., were applied; there was practically no hæmorrhage either during or after the operation.

For the first three days after the operation there was considerable pain over the liver area generally and especially in the neighbourhood of the wound; the evening temperature varied from 100° to 103°, the bowels were confined, but the pulse kept soft and regular. This pain was probably due to the stretching of adhesions caused by the shrinking of the liver and the obliterative localised peritonitis and pleurisy which the operation had set up. On the 24th an attempt to open the bowels by means of a glycerine suppository was made but without effect. The next morning 5 gr. of calomel were given and in the evening at 9 P.M. a glycerine enema was administered. The bowels then acted freely with abdominal pain at the time but great relief afterwards. The same night the patient, during the temporary absence of the sister, endeavoured to sit up in bed and fell back. After this fall he had considerable pain which yielded to morphia. The discharge next morning was more copious and tinged with blood. The pain continued during the 26th and on the morning of the 27th the dressings showed a considerable quantity of bile, and the bowels when moved by a glycerine enema in the evening yielded a clay-coloured motion of very firm consistence. With this appearance of bile in the dressings the pain became less severe. On the 28th there was no bile in the discharge and on the 29th a normal-coloured formed motion followed a glycerine enema. Up to April 8th, eighteen days after the operation, the bowels were moved every second day by glycerine enemata with a gradually decreasing after-pain in the abdomen, but on the 9th, after considerable premonitory pain, the bowels moved of their own accord and continued to act daily. Occasionally some tenesmus occurred and mucus was passed. The pain in the shoulder persisted for about 14 days after the operation; occasionally the pain was referred to the elbow and prevented even passive movements of the joint, which was apparently at other times

normal. The after-treatment of the case presented nothing of interest beyond that the dressings for a time showed typical "anchovy-paste" discharge. The patient left the hospital five and a half weeks after the operation in good health and free from any local trouble.

Medical Societies.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimen.—Dysmenorrhœa.—Ovariotomy.

A MEETING of this society was held on July 14th, the President, Dr. H. MACNAUGHTON-JONES, being in the chair.

Mr. F. BOWREMAN JESSETT exhibited a Double Pyosalpinx with broad ligament cyst removed by laparotomy.—In the discussion which ensued the following gentlemen took part: Dr. PURCELL, Dr. C. H. F. ROUTH, Dr. HEYWOOD SMITH, Mr. MAYO ROBSON, and the PRESIDENT.

Dr. HODGSON resumed the adjourned discussion on Dysmenorrhœa and said that they seemed to be agreed that there was such a thing as mechanical dysmenorrhœa and that it could be cured by mechanical means. He was glad to find that Dr. Bantock advocated the stem-pessary; he had found it useful in many cases. Sometimes when there was such a tendency to spasm as to cause the stem to be extruded he was in the habit of sewing it into the cervix, removing it in six weeks. He had seen no harm result from its use.—Dr. SNOW could not see any advantage of gradual dilatation over rapid dilatation under an anæsthetic, whilst the latter had several special advantages. If a patient subsequently married dysmenorrhœa was no doubt often improved after gradual dilatation as after other procedures, but in the case of virgins in how many cases was the improvement after gradual dilatation permanent? He believed the ring pessary often did good in these cases by putting the vaginal walls on the stretch and so relieving congestion by equalising the pelvic circulation.—Dr. BURLEIGH-ROBINSON agreed with the objection raised by Dr. Giles at the last meeting to the term "obstructive" as applied to mechanical dysmenorrhœa. The pain was due to congestion which was aggravated by the tension of the broad ligaments in cases of displacement. The veins were principally affected and tended to assume a varicose condition. To relieve this he had adopted the plan, described in a paper in 1892, of placing the patient on an inclined plane with the feet raised for several days before the period. In some cases he had obtained good results by advising that the patient should always sleep with the foot of the bed raised by means of blocks; this was continued for several months.—Dr. TRAVERS said that he had paid attention for many years to the question of dysmenorrhœa and had seen cases yield to Hewitt's treatment, to the Hodge pessary, and to various other kinds of vaginal pessary. He thought it would be a mistake if the opinion went forth that the society condemned all vaginal pessaries in the treatment of dysmenorrhœa. The stem pessary had also been useful in certain cases.—Dr. PURCELL remarked that there were some cases in which no local treatment or even examination was possible, especially in the case of some unmarried women, and then they must rely on medicinal means and measures of depletion. When local treatment was possible he thought gradual dilatation answered best.—The PRESIDENT urged that in every case a clear gynæcological and scientific differentiation of the cause of dysmenorrhœa should be aimed at, and whether the patient were young or old an examination should be made under an anæsthetic if necessary. He did not think "mechanical" was a scientific term and "spasmodic" was open to objection, for in all such cases some interstitial change was found in the uterus, or secondarily in the ovaries or tubes, and he believed there was no true analogy between these cases and organic or spasmodic stricture of the male urethra. Elevation by means of the inclined plane had been recommended by Dr. Heywood Smith many years ago, whilst raising the foot of the bed by blocks was suggested by Goodell of Philadelphia, who spoke of it as "putting the ovaries to sleep."—Dr. BANTOCK and Mr. SKENE KEITH briefly replied.

Dr. MACNAUGHTON-JONES read a paper, illustrated by specimens, on Two Unusually Interesting Cases of Ovariotomy, an account of which will be found on page 259.—Mr. BOWREMAN JESSETT and Dr. PURCELL briefly commented on the paper and Dr. MACNAUGHTON-JONES replied.

The Development of Ovariotomy.

A special meeting was held on July 23rd to hear Professor A. MARTIN'S address on the Development of Ovariotomy. The President, Dr. MACNAUGHTON-JONES, was in the chair, and there were also present: Professor Sanger (Leipsic), Dr. Theodore Landau (Berlin), Professor Mangiogalli (Milan), Dr. Howard Kelly (Baltimore), Professor Lapthorne Smith (Montreal), Professor Gardiner (Montreal), Dr. Young (Sydney), Professor Jacobs (Brussels), Sir James Dick, K.C.B., and Surgeon-General Jameson (the Director-General of the Royal Army Medical Corps).

Reviews and Notices of Books.

A System of Practical Medicine. By American Authors. Edited by ALFRED LEE LOOMIS, M.D., LL.D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University. Vol. II.: Diseases of the Respiratory System, Diseases of the Circulatory System and the Mediastinum, Diseases of the Blood, Diseases of the Kidneys, Diseases of the Bladder and Prostate Gland. Vol. III.: Diseases of the Alimentary Canal, Diseases of the Peritoneum, Diseases of the Liver and Gall-bladder, Diseases of the Spleen, Diseases of the Pancreas, Diseases of the Thyroid Gland, Chronic Metal Poisoning, Alcoholism, Morphinism, &c. London: Henry Kimpton. 1898. Price 25*s.* per volume.

THESE two handsome volumes, the scope of which is fairly indicated by the contents of the title-pages cited above, were issued recently at intervals of three months, and there now only remains to appear a fourth volume which will complete a work of somewhat wider extent than the ordinary text-book, but less ambitious than some modern "Systems." The second volume opens with an article upon the Affections of the Nose and Larynx by Dr. Edwin Solly of Colorado. His experience at that famed health resort makes his testimony as to the proportionate frequency of tuberculous laryngitis of much value. He contrasts this with other returns and concludes that laryngeal complications occur in about 30 per cent. of the cases of pulmonary phthisis and laryngeal ulceration in about 13 per cent. Dr. Eldridge Cutler of Boston writes upon Physical Signs of Pulmonary Disease. His descriptions are concise and free from theoretical disquisitions. We were interested to observe his statement that a pulsating empyema may be differentiated from aneurysm not only by its locality, but also by the fact that the former may almost always be made to disappear by pressure and that it increases in size with increased expiration. Dr. Lawrence Mason writes on Bronchitis and Bronchiectasis, as well as on Asthma and Hay Fever. There is nothing special to note in these or in the other articles on pulmonary diseases for which Dr. Reginald Fitz and Dr. W. W. Gannett are responsible. They are hardly full enough for a work of this class. Dr. Herbert Witney describes the "Non-tubercular Diseases of the Pleura," wherein he includes the various forms of pleurisy, empyema, pneumo-thorax, echinococcus and malignant disease. Surely it is barely correct to use the general title, especially as in the text the relationship of sero-fibrinous pleurisy to tuberculosis is discussed with the result that at least 40 per cent. of the former are considered to be dependent on the latter condition. Amongst the several articles upon diseases of the heart we observe one on Endocarditis by one of the editors, Dr. Loomis,

whose death occurred just as the first volume was about to appear. The article is a concise description of the "simple," "malignant," and "fibrotic" forms and comprises an account of chronic valvular disease of which the section on prognosis is particularly worth noting. The articles of Dr. J. T. Whittaker on Neuroses of the Heart and on Diseases of the Blood-vessels constitute perhaps the most thoroughly worked-out articles in the volume. In his description of Arterio-sclerosis and also in his account of Thrombosis and Embolism and of Aneurysm Dr. Whittaker conveys a vast deal of information based on the most recent knowledge. There is a useful and practical account of the Examination of the Blood by Dr. F. C. Shattuck and Dr. R. C. Cabot preceding their accounts of the various diseases of the blood. They devote a separate section to a discussion of the significance of leucocytosis and make out a good case for the value of this condition as a means of differential diagnosis. Dr. Henry P. Loomis writes upon Diseases of the Kidneys, dividing nephritis into the two great groups of acute and chronic and using the affix "diffuse" to indicate that the lesions are distributed throughout both organs. He thus distinguishes the classes of acute diffuse nephritis, chronic diffuse parenchymatous nephritis, and chronic interstitial diffuse nephritis, and in diagrammatic form shows that the acute disease may, like the chronic parenchymatous, pass by way of the "large white kidney" into the "smooth cirrhotic" form, whilst the "chronic interstitial" is of two types, both of which are common—namely, the "genuine inflammatory cirrhotic kidney" and the "degenerative cirrhotic kidney," or arterio-sclerosis of the kidney. The article is illustrated by several good micro-photographs. Dr. I. N. Danforth writes on Renal Calculus and other conditions as well as upon Diseases of the Bladder and Prostate, whilst to Dr. T. D. Colman are assigned the subjects of Abnormalities of the Urine and Uræmia. He refers to the various views propounded upon uræmia and shows how much light has been thrown on the subject by Bouchard's researches, the conclusions of which are fully stated.

The third volume is in great measure devoted to the consideration of gastro-intestinal and hepatic diseases and the articles upon these subjects show very well to how great an extent these subjects have been studied of recent years. Dr. C. G. Stockton and Dr. Allen Jones describe the Diseases of the Stomach, devoting considerable space to the methods of examination of the viscus and of its contents. It is evident that the subject of dyspepsia has at length emerged from the somewhat vague and uncertain position which it used to hold and that modern science, with its new methods of observation, is fast advancing our knowledge of the conditions which underlie the functional derangements of the secretory and motor apparatus of this important organ. Whether these new methods have really done very much to diminish the trials of the sufferer from dyspepsia may perhaps be open to question. There are very good accounts of gastric ulcer, or "peptic ulcer" as it is termed, and of "dilatation of the stomach" and "gastroptosis," whilst the forms of gastritis are clearly differentiated. Dr. W. W. Johnston commences his account of Diseases of the Intestine by a description of ulcer of the duodenum and points out how its presence may be distinguished from gastric ulcer. His account of intestinal indigestion is of much interest and we would especially point out the full exposition given of the diagnosis of such a state from other and more grave conditions. Dr. Henry Lyman continues the subject of Intestinal Disorders by accounts of acute and chronic intestinal catarrh, of constipation, intussusception, and intestinal occlusion, the subject of Appendicitis being assigned to Dr. W. F. McNutt. This article is characterised by much common sense, the writer endeavouring—and not without success—to clearly differentiate the cases which may be safely treated by medical measures and those which demand surgical intervention. Articles on Intestinal Parasites and on Trichinosis are written by Dr. G. Dock, whilst the important subject of Food-poisoning (Bromatotoxismus) is dealt with by Dr. Victor C. Vaughan. In his contribution upon Diseases of the Liver Dr. J. E. Graham, after describing jaundice and functional derangements, &c., has a section upon Diseases in which the Hepatic Cell is Principally Affected, under which he includes phosphorus poisoning, syphilis, alcohol, toxins of infectious diseases, epidemic jaundice, acute yellow atrophy, food-poisoning, and Weil's disease. It may be remarked, however, that not much is known about the direct action on the hepatic cell of either syphilis or alcohol. The Hepatic Cirrhoses are subdivided into (1) vascular cirrhosis, comprising the toxic, infective, and dystrophic forms; (2) biliary cirrhosis, including hypertrophic and calculous cirrhosis; and (3) capsular cirrhosis, divided into localised and generalised perihepatitis. Dr. G. R. Lockwood writes on Diseases of the Spleen and Dr. C. G. Stockton on Diseases of the Pancreas, whilst the Diseases of the Thyroid are described by Dr. F. P. Kinnicutt who gives an excellent account of Exophthalmic Goitre. The subjects of Cretinism and Myxœdema are admirably treated by Dr. M. Allen Starr and are plentifully illustrated by photographs showing the effect of thyroid medication. The volume also contains articles on Alcoholism, Morphinism, Glanders, Anthrax, Rabies, Actinomycosis, and certain other subjects, such as Purpura, Hæmophilia, Filariasis, Diabetes, and Insolation. In conclusion we may remark that the work, as a whole, is one which well represents the science and art of medicine of to-day.

Practical Plant Physiology. By Dr. W. DETTMER. Translated from the Second German Edition by S. A. MOOR, M.A., F.L.S. Illustrated. London: Swan Sonnenschein and Co. 1898. Price 12*s.*

THERE is no truer remark than that of the translator of this book in his preface that the teaching of plant physiology has been seriously retarded by the want of suitable manuals of laboratory practice. In the study of botany, whether we are dealing with a theoretical or practical manual, the physiological portion of the work (which in practical works is often conspicuous by its absence) invariably consists of a somewhat condensed chapter or chapters forming a conclusion. We quite agree with the author that there is no need for an apology and congratulate him on having made his own addition to the meagre selection of English text-books on this subject. The book is divided into five sections, each of which is further divided into a suitable though varying number of divisions. We may consider one of these divisions—namely, that dealing with the movement of water in plants, leading up through transpiration phenomena to the much vexed question of the ascent of sap through the wood. In a series of experiments he shows the existence of root pressure, the influence of temperature on the flow of sap, the periodicity and causes of root pressure, the escape of liquid, several experiments on transpiration phenomena, and the movement of water through the wood. Two or three experiments illustrate each point, concluding with a few remarks as to the results, no theoretical questions being separately considered. From complicated experiments with the thermostat and on transpiration we pass to some delightfully simple illustrations. Thus on page 233 the following experiment is given. Twigs of *Tilia* and *Salix* are placed in separate narrow-mouthed bottles filled with water, the water being covered with oil. Both are weighed and re-weighed after a certain exposure to

diffused daylight. This determines the loss by transpiration; in either case the variation is noted and the experiment repeated in bright sunlight when a difference is observed due to the stomata, in the case of *Tilia* opening more fully in strong sunlight than in diffused daylight, those of *Salix* not being affected in this way. Such an experiment could be very well performed in the biological classes of our medical schools. The few lucid experiments by which the author shows that the ascent of sap takes place through the lumen of the wood vessel and not through the wood itself are also worthy of note. While as a whole the book appeals mainly to the research student it will be seen from the above instances that it would prove useful in the hands of a capable demonstrator in the biological classes.

The Mental Affections of Children—Idiocy, Imbecility, and Insanity. By WILLIAM W. IRELAND, M.D. Edin. London: J. & A. Churchill. Edinburgh: James Thin. 1898. Pp. 435. Price 14*s.*

DR. IRELAND'S former work on Idiocy and Imbecility was in its time the best English work on the subject and the present treatise will be welcomed by all interested in the subject. Some chapters are reintroduced with necessary modifications from the older work, but a great part is entirely new. Dr. Ireland commences with a general discussion of the causation of idiocy, in which he gives the chief place to neurotic heredity, considering alcoholism a less important factor *per se* than is generally held. He strongly combats the view that idiocy is to be looked on as an example of reversion to a lower type in the evolutionary scale. Dr. Ireland makes the following classification based on pathological grounds: (1) Genetous idiots, including the well-known "Mongolian" group; (2) microcephalic; (3) hydrocephalic; (4) eclampsic; (5) epileptic (6) paralytic; (7) traumatic; (8) inflammatory; (9) sclerotic (10) syphilitic; (11) cretins; and (12) idiots by deprivation. This classification is convenient, notwithstanding that from the point of view of symptoms the groups are much less definite. The fullest descriptions are of the genetous idiots and of the microcephalic. The general peculiarities of feature and of physical and mental devolopment are very clearly given, although Dr. Ireland has been rather sparing in illustrating his descriptions from photographs of his cases. Individual and striking cases are described in detail, and there are some useful though rather brief accounts of the conditions of the nervous system found after death. Medical treatment in these cases calls for little remark, and Dr. Ireland has no belief in surgery for relieving the mental condition. Craniectomy, he believes—and we agree with him—to be useless for the relief of microcephaly, the operative procedure being "founded on an incorrect pathology." The chapter on Cretinism is a little disappointing. There is an admirable chapter on a subject which usually is passed over—Insanity in Children and Insane Idiots. The sensory deficiencies of idiots are described, but no mention is made of the excessive development of the powers of smell which has been recorded by others. The mental limitations of idiots and the best methods of educating them are described and a short account is given of the laws bearing on the subject. The book concludes with an interesting chapter on "Wolf Boys"—boys who are found wild and are supposed to have been fostered by wild animals. When serving in the army in India Dr. Ireland had opportunities of inquiring almost at first hand into several supposed instances. He believes that some were impostors but that most were idiots who had been exposed by their parents in the woods. He quotes some delightful stories of boys, reminding one of Kipling's Jungle Book hero Mowgli, but it is clear that Dr. Ireland is sceptical as to the truth of most of them.

Dr. Ireland is so well known as an interesting writer that expectation as to the quality of the book was pitched high and was not disappointed. It is the best account we have of an extremely difficult subject and is worthy of the great reputation and long experience of the author.

LIBRARY TABLE.

Economics, Anæsthetics and Antiseptics in the Practice of Midwifery. By HAYDN BROWN, L.R.C.P., L.R.C.S. Edin. London: J. & A. Churchill. 1897.—This is a clearly and sensibly written little book, which in the compass of 103 pages lays down some admirable rules for the conduct of a case of midwifery, including the interview with the patient for the purpose of fixing the expected day of delivery. Mr. Haydn Brown's remarks are eminently practical and cannot fail to be of advantage to the younger generation of practitioners.

Practical Organic Chemistry: the Detection and Properties of Some of the More Important Organic Compounds. By SAMUEL RIDEAL, D.Sc. Lond. Second edition. London: H. K. Lewis. 1898. Price 2*s.* 6*d.*—This is a compact little volume intended essentially for the student engaged in practical organic work. It contains no definite scheme for the identification of compounds, but it gives the specific reactions and tests for each body in separate paragraphs. The information is just such as will be a valuable help and guide to those preparing for the London University examinations. The present edition (second) is revised in accordance with the new Pharmacopœia. As the book is intended largely for medical students we think the section on urinary calculi should have been amplified. In regard to Pettenkofer's test for the biliary acids we have found the substitution of glucose in strong sulphuric acid to serve better than ordinary sugar, which the author recommends, since the former does not easily char and thus tend to obscure the colour reaction. Again, the "mirror" test for tartaric acid when tried in the way suggested does not always give satisfactory results. We prefer first to add potash to a solution of silver nitrate and then just dissolve the precipitate in the slightest excess of ammonia. If to this clear solution the dissolved substance suspected to contain tartaric or citric acid be added and the mixture gently warmed an excellent silvering of the tube results in the former case but not in the latter.

Les Troupes Coloniales: Hygiène du Soldat sous les Tropiques. (*The Colonial Troops: Hygiene of the Soldier in the Tropics.*) Par F. BUROT, Médecin principal de la Marine, Officier de la Légion d'Honneur, Officier d'Académie, Lauréat de l'Institut; et M. A. LEGRAND, Médecin de 1re classe de la Marine, Chevalier de la Légion d'Honneur, Lauréat de l'Institut. Paris: Librairie J. B. Baillière et Fils. 1898. Price 2 fr. 50 c.—This is a very useful and instructive volume in continuation of two preceding parts dealing with the causes of the diseases and deaths in the colonial army of France, which may be read with profit by medical officers and others interested in the hygiene of the French army. It deals in a lucid and logical way with a variety of subjects connected with the life of the French soldier abroad, the organisation and administration of the medical and sanitary services, and the special measures adapted for expeditions, the habitation, alimentation, and clothing of the soldier, the recruiting and selection of troops, the nature of the maladies to which soldiers serving abroad or on expeditions in tropical or sub-tropical climates are liable, with the hygienic measures of a general or special nature that either have been or are really required to be followed in order to avoid a large amount of preventable suffering and sacrifice of life as well as of public money. These are objects in which everybody is interested and an

incalculable amount of good would be done if the wise precepts and indications set forth in this volume were only carried out.

JOURNALS AND REVIEWS.

Tabib el Aila.—The Arabian medical writers are held in much repute historically, but in England, nowadays, there is seldom an opportunity of seeing contemporary sanitary works printed in Arabic. *Tabib el Aila*, however, a monthly sanitary journal published in Cairo, is now in the end of the third year of its existence, and has subscribers in countries as far apart as Syria and Morocco, but its chief circulation is in Egypt, where we are informed it is a well-known production of the native press. On the front (i.e., the right hand) page the Arabic title is accompanied by the French and English renderings, *Le Médecin chez Soi* and *The Doctor at Home*, which sufficiently indicate that the paper is intended for general readers. The June number consists of 24 pages (12 leaves) of about 20 lines each, to which are added 8 pages of advertisements. The opening article is a biography (with portrait) of Professor Potain, who is described in the Arabic text as having been born in Paris on July 10th, 1825. The subsequent papers are on the precautions to be observed by diabetics, the teeth, on clothing of phthisical patients, hygiene for females, prescriptions for diarrhœa and indigestion, deaths in the Spanish army in Cuba, letters from correspondents on various subjects, and notices of books. The proprietor and editor is Dr. Alfred Eïd of Cairo.

Annales de l'Institut Pasteur. Edited by M. E. DUCLAUX. Paris: Masson and Co. Vol. XII., No. 6. June, 1898.—This number commences with an important and well-illustrated article by Dr. Nowak of Cracow on the Histological Changes produced in Various Organs by Serpent Venom and by the Poison of Scorpions. Changes were chiefly found in the liver and kidneys and consisted of fatty degeneration and rapid necrosis of the hepatic cells and renal epithelium and some small, round-celled infiltration around the bile-ducts. The changes are similar to those found by Sanarelli in yellow fever and those occurring in the early stage of acute yellow atrophy of the liver. Dr. Nowak believes that the liver and spleen are affected because those organs are endeavouring to excrete the toxin. 2. M. Gabriel Bertrand has investigated the bio-chemical production of Sorbose, a peculiar sugar which was found first in a decoction of the berries of the mountain ash which was allowed to ferment spontaneously. M. Bertrand shows the production to be due to the action of a special bacillus and further shows that this bacillus is carried to the syrup by a particular red fly (Drosophila cellaris). Pure cultures of the bacillus will cause the production of sorbose in other liquids than rowan berry juice, such as a mixture of wine and vinegar, and even with cherry juice. 3. On the Maturation of Cheese, by M. J. Schirokich, dealing with the influence of diastase produced by the growth of species of tyrothrix. 4. On an Epidemic of Enteric Fever due to Tainted Water, by Dr. Schneider. 5. Report of the Pasteur Institute at Athens. 6. Critical Review on Proenzymes, by the editor.

The Journal of State Medicine. Vol. VI., No. 7. July, 1898. London: Baillière, Tindall, and Cox. Price 2*s.*—This number contains the conclusion of Professor Delépine's instructive paper on the Bacteriological Survey of Surface Water-supplies, in which he gives some interesting instances of the variations *quâ* bacteriological impurity in specimens of water obtained before and after heavy rainfall and when procured above or below a source of pollution. He also furnishes the results of some examinations showing the danger of relying upon filtration as a means of removing previous contamination. Hygiene in Plague forms the subject of a paper by Captain W. O. Beveridge, R.A.M.C.; and a full account is given of the annual dinner of the institute.

Analytical Records
FROM
THE LANCET LABORATORY.

"AMIRAL" SOAP.

(THE AMIRAL SOAP SYNDICATE, 28A, BASINGHALL-STREET, E.C.)

"AMIRAL" soap is suggested as an external cure for corpulence and obesity. The idea is distinctly novel and is based apparently upon the solvent action upon fat of the active constituents of animal gall. The *rationale* of the treatment therefore is that when the soap is applied locally it is absorbed by the pores of the skin with the result, it is stated, of dispersing the adipose tissue. We confess to being sceptical as to the possibility of thus dissolving the panniculus adiposus, but we note that references are given of actual trials having been made with this result. It is stated that from two to four tablets of soap reduce the waist measurement of persons from three to five inches within one month. We found the composition of the soap to be well adapted for application to the skin. We could trace no injurious substances and it was quite neutral. It is a light green soap with pleasant aromatic smell. Further analysis showed that it contained a micaceous powder which when separated and placed between the fingers imparted a smooth slippery feeling like French chalk. On decomposing the soap with a mineral acid and filtering the separated fatty acids the clear filtrate was shaken with ether. On evaporating the ether a residue was obtained which gave a marked response to the tests for the biliary acids.

TABLOIDS OF ZINC OXIDE.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, E.C.)

The tabloid of zinc oxide crumbles instantaneously when brought in contact with water. Each tabloid contains 2 gr. of the oxide. The ease with which this tabloid breaks up renders it well adapted for internal administration, as in the treatment of summer diarrhœa and gastralgia. In epilepsy resulting from peripheral irritation zinc oxide has been employed with encouraging results. The base has also been used for the relief of nervous tremors and in reducing the unsteadiness due to chronic alcoholism.

VALTINE MEAT GLOBULES.

(THE VALENTINE EXTRACT CO., LIMITED, ST. GEORGE'S HOUSE, EASTCHEAP, E.C.)

These preparations represent a new and valuable departure in meat extracts. Hitherto meat extract has been met with in the form of a dry paste or else in a nearly liquid condition. Both forms have their disadvantages. The valtine meat globules are made in various sizes and consist in reality of flexible capsules containing a definite amount of semi-solid extract of beef. No doubt some advantage is gained, especially in regard to flavour, from the fact that the concentration of the extract is not carried to a high point or near the solid condition. The result is that the contents of the valtine globule have a very fresh, agreeable, meaty flavour. Again, they are extremely handy and convenient to use, being made in sizes in accordance with various requirements. Thus to make a large cupful of beef-tea or clear soup of excellent flavour it is only necessary to place one of the large-size globules in hot water and to allow the contents to diffuse into the liquid. According to our analysis the extract possesses the properties of both a nutrient and stimulant. It was as follows: moisture, 26·21 per cent.; organic matter, 60·54 per cent.; mineral matter, 13·25 per cent. The organic matter contained nearly equal proportions of meat extractives (soluble in alcohol) and proteoses (insoluble in alcohol and precipitated by a saturated solution

of ammonium sulphate), with a trace of albumin. A further novelty, and one which we approve, consists in supplying with the globules tablets or "peloids" as they are called, containing various flavouring materials and condiments. Tastes differ widely as to the amount of condiment or flavouring which should be added to beef-tea or soup. By this device, however, each can satisfy himself. This step is particularly advantageous in the case of invalids who often find a meat extract repulsive on account of an objectionable added flavouring. Lastly, it should be stated that the valtine globules are made of a size to admit of swallowing whole without any difficulty. In this way nourishment can be readily administered where extract in the form of beef-tea or soup is unsuitable.

OREXIN TANNATE.

(KALLE AND CO., BIEBRICH-AM-RHEIN. A. AND M. ZIMMERMAN, 9 AND 10, ST. MARY-AT-HILL, E.C.)

Orexin tannate has been tried in the treatment of anorexia, as in phthisis, anæmia, and chlorosis, and in cases of atony of the stomach. It is a yellowish-white powder, not unlike calomel in appearance. It contains tannin in combination with "orexin," a base obtained by a synthetic process from certain coal-tar derivatives. It is soluble in dilute hydrochloric acid and probably therefore in the gastric juice. It dissolves also in alkali, according to our experiments, the solution turning a deep brown from the production of alkaline tannate. When the dry powder is heated in a tube it evolves a strong fishy odour characteristic of amines. Orexin tannate is said to be an excellent stomachic, stimulating the acid secretion of the stomach, encouraging its motor activity and materially shortening the process of digestion. The salt may be obtained in powdered form or in chocolate tablets, the latter containing 4 gr. of orexin tannate.

(1) "GAIACOPHOSPHAL" AND (2) "PHOSPHOTAL."

(SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE, 8, QUAI DE RETZ, LYONS: AGENTS: R. W. GREEFF AND CO., 20, EASTCHEAP.)

These interesting bodies are new combinations of guaiacol and creasote respectively, which are stated to present distinct advantages over the compounds hitherto used. "Gaiacophosphal" is a definite white crystalline salt smelling distinctly of guaiacol. On treatment with potash the smell of guaiacol is more strongly developed. The salt readily melts on heating, and speedily dissolves in water. "Phosphotal" is a phosphite of creasote and is a gummy looking liquid with a creasote-like smell. On warming with potash the guaiacol evidently separates. Experiments are quoted to show the advantages of these compounds in contrast with the phosphates and combinations hitherto employed. As is well known guaiacol and creasote have been administered with encouraging results in some cases in phthisis, typhoid fever, &c., and in respiratory disorders. These new salts are regarded as pharmacological improvements.

EFFICIENCY OR COMPULSION?

To the Editors of THE LANCET.

SIRS,—A report which I recently made to my committee on the relation of vaccination to the recent small-pox epidemic at Middlesbrough has been criticised by Mr. Alex. Paul in letters which he has written to various evening papers, and is also referred to in an annotation in THE LANCET of July 23rd. I take this opportunity of forwarding you a copy of this report, which to my mind points out as has rarely been shown before the value and protection afforded by vaccination; it also clearly shows where the weakness of the present system of vaccination lies—i.e., in the inefficiency of most primary vaccinations and the want of systematic revaccinations. The State requires its servants, the public vaccinators, to practise vaccination in a prescribed manner, but there is no such standard enforced in the cases of the numbers of children vaccinated by other medical practitioners who may and do exercise their own judgment as to whether they shall vaccinate a child in one, two, three, or more places. How many medical practitioners are there in this country who always perform vaccination with the efficiency required by the Local Government Board of the public vaccinators? And what medical man is there who at one time or another, when a mother has brought her child to him for vaccination and has pleaded for "just one place or two small ones, Doctor," out of the kindly sympathy of his heart has not yielded to this prayer in direct opposition to his better judgment?

Should not the Vaccination Bill now before Parliament have clearly defined what constitutes an efficient vaccination and the period for which such protection lasts and have made suitable provision for seeing that such a vaccination was performed in every case? Mr. Paul in his letters expresses astonishment that there should have been 1207 vaccinated persons attacked with small-pox at Middlesbrough, but how many of these 1207 can be considered to be really vaccinated persons—i.e., with scars of such an area and of such a quality as can be considered to be really protective and in whom the protection had not passed off through the lapse of time? We only know of 87 who had been re-vaccinated, leaving 1120 who had only had a primary vaccination. Of these 1044 were over the age of 15 years. If the 1120 were primarily vaccinated during the early months of infancy, as is very probable, then the 1044 cannot be classed as vaccinated persons protected from liability of attack, and the older they are the less is the protective or modifying value of the primary vaccination, this being most clearly shown in the table of deaths amongst the vaccinated class given in my report, the greatest mortality being at the greatest age periods.

The surprise at these results expressed by Mr. Paul denotes that he either looks at the question from the point of view of the biased anti-vaccinationists who do not care to examine both sides of the question or that he, like a great majority of the inhabitants of this country, is utterly ignorant as to what constitutes a thorough and efficient vaccination and what is claimed for it as a protection against small-pox. One fine day does not constitute a summer nor does a vaccination consisting of one or two small scars afford protection for life against liability to attack from small-pox. It should be our duty as medical men, together with all other believers in the virtues of vaccination, to instruct the population on these points and the former should see to it that every child submitted to them for vaccination should be so vaccinated as to ensure its being rendered immune to attack. If this were so the populace would soon gain confidence in vaccination and there would be little need to discuss the question of compulsion. The anti-vaccinationists would not be able to point to the fact, as they have done in the past, that the majority of small-pox cases occur amongst a so-called vaccinated community.

I am, Sirs, yours faithfully,

CHARLES V. DINGLE, M.D., B.Hy. Durh.,
Medical Officer of Health of Middlesbrough.

July 25th, 1898.

THE REPORT OF THE VACCINATION COMMISSION.

To the Editors of THE LANCET.

SIRS,—It is difficult to see what can be the object of the New Sydenham Society in simply reprinting the final report of the Vaccination Commission when it can be purchased of the Government printers at a very reasonable cost. But to print it without an index is still more inexplicable. It is a grave reflection upon *someone*—I do not know whether it may be the Commission itself or the Treasury—that it should have been left to General Phelps, the president of the Anti-Vaccination League, to publish an index to the report of the Commissioners as well as to that of Dr. Collins and Mr. Picton. These two indexes may be obtained (1*s.* each) on application to General Phelps, Edgbaston, Birmingham. They are very fairly done. As to an abstract of evidence, that is much more worth the attention and expenditure of the New Sydenham Society, but it will need to be carefully done to be really useful and by someone who is pretty familiar with the vaccination controversy. What is much more practicable and would be very useful and not very costly would be a consolidated index of the whole of the evidence. But that involves the Herculean labour of indexing the sixth volume, which, like the final report, was published without an index. It is understood that Lord Herschell has made an effort to get this latter defect remedied, but with what success I do not know.

I am, Sirs, yours faithfully,

Gloucester. FRANCIS T. BOND, M.D. Lond.

THE LANCET.

LONDON: SATURDAY, JULY 30, 1898.

ONE great value of periodical congresses such as that of the British Medical Association which is being held this week in Edinburgh is that they afford opportunity for the exposition of fresh facts and doctrines by men who can speak with authority, thereby adding to the general stock of knowledge and serving a very useful educational purpose. The Address in Medicine delivered by Professor T. R. FRASER certainly comes under this category, for it was mainly occupied with a remarkably lucid and exhaustive account of the present position of science in regard to the share taken by toxins in the production of disease and the new aspect which has been given to the interpretation of the facts of infective disease and the prospects which are offered for their mitigation and abolition. We cannot pretend to follow Professor FRASER in all parts of his scientific address; it must be read and read again before it can be fully mastered, but it yet behoves us to indicate what are its main teachings, since they have such important bearings upon the conception of the nature of such diseases and upon their treatment. It is undoubtedly true that toxic influences play a much larger share in the production of the phenomena of disease and of the structural changes which constitute morbid anatomy than could have been possibly conceived a few years ago. There is abundant evidence, direct and indirect, that poisoning, whether from without or within, plays a chief part in the derangements to which flesh is heir. Indeed, there would seem to be no limit to which this conception of toxæmia may not lead. It embraces conditions as remote from ordinary poisoning as it is possible to conceive, for who can say that auto-intoxication is not at the root of many a disorder, seeing how wide are the opportunities and how varied the conditions for the manufacture and the retention of substances within the body the action of which on blood and tissue is highly detrimental to their integrity. As Professor FRASER remarked, many of the ptomaines and leucomaines are alkaloidal in nature and rival the vegetable alkaloids in potency, and many a disease may well be ascribed to their agency. To some it would appear as if medicine were about to enter upon a new phase of generalisation, and they may see in the doctrine of toxins a parallel to some of the old speculations upon the nature of diseases.

The modern study of infective diseases offers ample scope for the application of this doctrine, only here we have to do with toxins produced by microbic agents which have been revealed by the labours of the bacteriologist. To explain the phenomena of an infective disease it is not merely necessary to postulate the existence of a pathogenic microorganism, but it requires further that this microbe should produce a poison to which the symptoms and the morbid changes of the specific disease are due. That it is not the microbe that is the immediate cause of the phenomena is proved by the fact that the toxic effects are produced by the filtered solution of the material in which the microbes have been cultivated. Now one of the most remarkable facts about these infective diseases is the protection which a single attack generally affords against further infection. This fact, long observed in the diseases themselves, has been amply verified by experimental inoculations, but it has been still further advanced by the demonstration that the blood-serum of protected animals possesses the power of transmitting this resistance when injected into other animals. Professor FRASER showed that this acquired immunity could not be solely explained as we may explain the immunity to ordinary poisons by any theory of tolerance. Nor did he think it possible for phagocytosis to account for all the facts. He dwelt with necessary emphasis upon the singular differences in the duration of "artificial" immunity as compared with "natural" immunity, or that protection which an attack of the infective disease itself affords. He argued that in cases where immunity is prolonged there must be a continued reproduction of the protective substances, which implies the continued existence of the attenuated micro-organism which yields the antitoxin. This is a view which is most suggestive, and which seems to be necessary to explain the reason why the immunity conferred by antitoxic serum is so fleeting in comparison with the more permanent effect of an immunity conferred by the microbes themselves. We may well quote here a passage which conveys a moral to be taken to heart by all who are working at the experimental side of this question: "Unless by education we can so tame and civilise a pathogenic microbe as to subdue its virulent and hostile disposition while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunising vaccines equal in efficiency to the lymph of vaccinia will probably never be realised." And we note the warning that perchance the very germicidal action of glycerine which is being used to remove from vaccine lymph all external contamination may deprive the lymph of its long-lasting prophylactic power.

Professor FRASER discussed in some detail the origin of the antitoxins and antivenins and argued very plausibly that they are derived from the toxins and venins themselves, produced by chemical changes in the latter or forming part of their complex composition. If this be so it may, as he says, be only a matter of time before the resources of chemistry will enable us to extract the antidote from the poison, without recourse to the somewhat cumbrous method of serum production. He dwelt also upon the mode of action of antitoxins, which is still largely a matter of speculation; but if this is not yet clear it is at any rate accepted that in their employment the treatment of the diseases in which they are available comes to be that of a direct antidote, an attack on the cause of all the symptoms, an arrest of all the changes which are set up by the poison. His experiences with cobra venom have shown him how marvellously these mysterious antidotes act, and we cannot read his words without recognising that we

have within our reach remedial agents for diseases which have hitherto defied any direct treatment and for the mitigation of the symptoms of which we have hitherto had to rely mainly upon the *vis medicatrix naturæ*, aided by measures to sustain vitality and promote elimination. Already, however, in the partial way in which it has been possible yet to pursue it this line of treatment, in the guise of serum therapeutics, has effected much, and we join with Professor FRASER in the belief that a yet greater boon is in store for mankind, based on the recognition of the toxic origin of diseases and all that flows from that doctrine.

IT is open to question whether the custom of insisting upon an Address in Medicine and another in Surgery at the annual meetings of the British Medical Association would not sometimes be more honoured in the breach than in the observance. We fancy the distinguished surgeon to whom his brethren allotted the task of preparing an Address in Surgery at Edinburgh must have shared this view. For it is evident that he had nothing particular to say to the profession and his address is a plain, homely discourse on the present position of surgery. Many familiar topics are touched upon, none of them of any novelty, and upon none of them are his remarks of striking force or freshness. Mr. ANNANDALE playfully alluded to the necessity every Scotsman feels of dividing his discourse under certain "heads" and he chose the minimum—three. They were good ones, too, for he spoke of surgery in its scientific aspect, its practical aspect, and its moral aspect. Too much stress cannot be laid on the scientific basis of surgery. Science is a word which has come to be used in too technical and artificial a sense. We need to get back to its simple meaning—knowledge. We are too apt to think of it merely as a matter of test-tubes and microscopes, and so when the scientific aspect of surgery is discussed visions of bacteria rise in the mind. We would rather lay stress upon the importance of all branches of surgical knowledge and upon the fact that on all sides in every direction our knowledge of disease and of surgery has increased and become to a large extent defined. The days of empiricism are largely gone by, but we have not escaped altogether from the thraldom of tradition. The art of surgery—the handicraft—is a great accomplishment, but unless associated with a knowledge of nature's processes and powers its possession does not constitute a surgeon. Knowledge is power in everything, and only so far as we know health and disease, the causes, tendencies, signs, and consequences of morbid processes, can we deal with them with real success. The art of surgery is far in advance of the science; our failures arise far more from want of knowledge than from lack of skill. To the average man the acquisition of an art comes easier and is more attractive than the pursuit of knowledge and its results are more immediate. It is therefore all the more incumbent upon our teachers to lay the greatest stress upon the importance of knowledge and to show with unwearying iteration that it is by knowledge alone that we become truly fitted for the practice of our profession. There is one great department of surgery where the absence of this knowledge is almost complete and is attended with grave evil—we mean the pathology of new growths. Of the true nature of tumours we know practically nothing. An enormous amount of experience of their external features and "accidents" has been acquired, but we are as ignorant of their nature, their real cause, and their vital conditions as were our fathers. The result is that we are as powerless as they in their treatment and an empirical amputation is the only therapeutics we adopt.

There are one or two points in the moral aspect of surgery upon which, we think, Mr. ANNANDALE might well have enlarged. In our view the greatest of all the changes in the moral position of surgeons within recent times is the enormous responsibility which now attaches to a surgical operation. In former days the responsibility of the surgeon was limited to determining whether an operation should be undertaken and, if so, what and when. But now we have learnt that the issue of an operation is very largely under the surgeon's control and therefore a new burden is cast upon him. An operative failure cannot nowadays be disregarded as in the past and laid to the charge of fate or trust in Providence. It is not too much to say that this sense of enhanced personal responsibility should be ever present to the surgeon's mind, not as a haunting paralysing dread, but as a stimulus to be ever on the alert and at his very best. On the moral aspect of surgery, too, something may be said about the *cacoëthes secandi* that is not unknown in many branches of the art—the restless activity in the use of the knife that seems to regard the poor human frame chiefly as a field for operative displays. We have heard of surgeons who speak of operating as their "hobby," their chief pleasure in life, their one panacea against *ennui*. When the history of this century comes to be written the story of LISTER'S work will form a very bright page in it, but the historian will have to fill in the shadows if his picture is to be a true one, and to tell that the safety of a surgical operation led in some cases and in some hands to a reckless resort to operation.

IT is not surprising that the Vaccination Bill met with much criticism when reported last week to the House of Commons by the Grand Committee. The criticism, however, was devoted almost entirely to one point, with the result that an issue at least equal in importance was left entirely untouched. On the question of conscientious objection twenty-three speeches were made by Members of Parliament outside the Government and no less than twenty-one of these urged the Government to yield on this point and to make allowance for the alleged conscientious objector. It will be recollected that in the Committee Sir WILLIAM PRIESTLEY carried an amendment providing that, where a penalty had been imposed under Section 29 of the principal Act in the case of an infant no further penalty should be imposed until the child, had reached the age of four years, and even then that conscientious objection might be allowed for if the bench were "satisfied" of the genuineness of the objection. In the end Mr. BALFOUR, speaking for the Government, agreed to frame a similar clause with regard to infantile vaccination. This clause was carried, but in the course of the discussion it began to appear that many Members were now dissatisfied because the Government had yielded, and Mr. CHAPLIN pathetically complained that the

body of opinion in favour of the infliction of penalties had not given itself earlier expression. Ultimately when the question of the third reading came up protests that the Bill had been essentially altered were so numerous that the Speaker interposed and declared that in the circumstances the reading could not be taken.

That is how the matter stands at present. Many of those who argued for a conscience clause are heartily in favour of vaccination and all those who object to the same clause are equally anxious for the promotion of the Jennerian prophylaxis. There is simply between these parties a divergence of opinion as to the best legislative means for promoting vaccination. We have no hesitation in saying that if the Government had taken the advice which it has received from the medical profession it would have found itself in no such unfortunate position. In effect the advice has been that a provision recognising conscientious objection should be accompanied by a provision placing revaccination on the same footing as primary vaccination. That is the way, and the only right way, out of the present difficulty. As has been frequently shown in these columns since the Royal Commission issued its report there can be no hardship whatever in requiring vaccination at twelve years of age provided that allowance be made for persistent objectors. If Mr. CHAPLIN had been able to point out to those who now oppose the concessions which have been made that while he was relaxing the law with regard to infants this law, as relaxed, was now also to apply to adolescents, he would have closed their mouths so far as the promotion of vaccination is concerned. The application of the law to adolescents would so greatly increase the grand total of protection against small-pox in the country that the concession with regard to infants might have been gracefully yielded. Mr. CHAPLIN, however, has chosen to ignore revaccination and his punishment is that his Bill satisfies no one and that no one excepting the Government itself cares very much whether the measure is passed into law or dropped into limbo. Systematic revaccination could not, it it is true, be carried out without the aid of the Education Department, and it may be assumed as a rule that opposition is the natural attitude of a Government Department towards any proposal for the imposition of new duties and responsibilities. Quite likely the central educational authority has some vague fear that if school boards throughout the country were required to furnish to local authorities for vaccination periodical returns of children about to attain the age of twelve years the interests of education might in some degree be interfered with. Quite likely, too, this might really be the case if revaccination were to be made compulsory. But in the presence of a provision that any parent continuing to entertain serious objection to vaccination might by stating his objection to the bench be relieved of the necessity for submitting his boy or girl to vaccination there could be no hardship felt and no interference with education.

This was where the Royal Commission itself blundered. That body strongly approved of revaccination but did not find itself justified, in the state of opinion in some parts of the country, in recommending that revaccination should be made compulsory. There need, however, be no question of compulsion. Surely, the State, believing in vaccination and revaccination as the only practical means of preventing small-pox, has at least the right to demand that every parent in the country shall be at the trouble when his child is an infant and again when he or she attains the age of eleven or twelve years either to submit the child to vaccination or to go before a proper tribunal and declare his objection to the performance of the operation. From the beginning the Government has shirked this question and it owes its troubles in connexion with the Bill to its weakness on this essential point. If owing to pressure of other business it cannot now change the Bill in order to remedy its radical defects it would be far better to delay the whole subject for another year. The stated opponents of vaccination are dissatisfied. The supporters of vaccination are also dissatisfied. Every believer in vaccination, whatever be his opinion as to the relief of conscientious objection, believes also in revaccination. It can only be by providing for revaccination that the Government will gain any credit for its legislation and that small-pox will be kept in check in the adult as in the infant population.

Annotations.

"Ne quid nimis."

THE WATER-SUPPLY OF DORKING.

THE people of Dorking are suffering much from a deficiency in their water-supply. According, to a report now before us, at the last meeting of the Urban Council the chairman said that he had received many complaints from householders who had stated that they had been without water-supply for weeks. He had pointed out that in his opinion the council had no real power in the matter and that Parliament had given the "monopoly of the supply" to the water company, and that all he could do was to sympathise with those without water, which of course was of little use, but he thought the council ought to try to do something to provide water for the districts now without any supply. The clerk of the council had written to Lord Ashcombe, a neighbouring landlord, to ask him to allow the council to obtain water from a meadow in which there was a swimming bath and where there was an ample supply of water. If they could obtain water and send it round it might tide over the difficulty for the present. Unfortunately, Lord Ashcombe had not yet given permission that his water should be used for that purpose. The chairman thought that the town ought to acquire the Dorking waterworks. If the directors of the company were unable to get water possibly "the representatives of the people" might succeed in doing so. The immediate trouble, however, was to provide water for the emergency. The borough surveyor said that no complaint had been received with regard to the low service supply and he wished that people who had a proper cause of complaint would write so that a proper record could be kept. One member of the Council complained that he had been entirely without water and consequently had been unable to have a fire in his kitchen. If the water company had a monopoly of supply it was certainly their duty to supply the town. As a practical measure the chairman of the council then formally proposed that he should be authorised to make arrangements for the supply of the immediate necessities of the inhabitants who were without water, that additional labour should be employed for that purpose and that the water company should be informed that the council would hold

the water company responsible for the expenses incurred. One member of the council said that he had never had a constant supply of water although the water company was under a statutory obligation to give a constant supply if possible. The officials of the company had said that they could not give a constant supply, yet they extended the boundary of their area to include outlying places. He thought that the water company should be bought up. At the present time they were paying a dividend of 10 per cent. We give fully this report which has reached us. If correct it shows an extremely disgraceful state of things. According to the evidence the water company is a successful enterprise, paying no less than 10 per cent., and yet it does not carry out the work which it undertook under the privileges of a Parliamentary monopoly. The town council of Dorking have arrived at a very wise decision in agreeing to arrange as well as possible for the present supply of those people who are without water. We strongly advise all those who have suffered from a deficiency of supply to act on the suggestion of the borough surveyor and to note carefully the exact dates on which the supply was deficient. The town council would do wisely to at once communicate to the Local Government Board an accurate account of the state of things which at present exists in the borough. It need not be said that if the water company were at the present moment bought up by the town authorities they would be in no better position to supply the inhabitants than the company itself. Arrangements for water-supply take some time to carry out. Possibly the sources of the company are insufficient or they have not sufficient pumping power. The "municipalisation" of a company, it must be insisted on, does not increase either the amount of water in the wells or the efficiency of the pumping powers. If the Dorking Water Company does not carry out its statutory duties the town council of Dorking would do wisely to apply to Parliament for powers to enable them to carry out the supply for themselves. In a case of this sort it would be a monstrous injustice to the ratepayers for them to buy the company's works at an exorbitant price and then be put to the expense themselves of providing the water and the necessary pumping machinery. We heartily congratulate the town council of Dorking on the public spirit they are showing in doing the best they can in the trying circumstances under which they find themselves placed.

ARE TWO MEDICAL CERTIFICATES NECESSARY FOR LUNACY CASES?

THE Lunacy Act (1890) provides that two medical certificates are necessary in the case of patients—so-called "private cases"—who are removed directly to an asylum from their homes. On the other hand, for pauper cases who pass through the workhouse on their way to the asylum one medical certificate is sufficient, the reason probably being that during the patient's stay in the workhouse under a temporary detention order he is under closer observation. For the converse reason it is very desirable that the justice should seek in all cases sent *directly from home* the opinion and certificate of two medical men separately given, whatever the law may be. It is much safer that he should do so and fewer mistakes would happen, for in private cases it stands to reason that the medical man cannot know so much about the case when he only visits it occasionally and at chance times as when the patient is under the daily observation of skilled attendants and the medical officer of the workhouse. But, curiously enough, the justice is not bound to summon two medical men to his aid in every case "not a pauper." We have lately received a communication from one of our readers informing us that the lunacy justices of his district are in the habit of signing removal orders for lunatics of the working and artisan class on one medical certificate only, and asking if a lunatic can be so dealt with, he not being a pauper in receipt of medical or other parochial relief? The question raised is a very nice one and in order to settle the point a typical case with full detail should have been submitted. Further information is required and especially as to whether the patients in question pass through the workhouse or not on their way to the asylum. Let us first take the case of a patient who does pass through the workhouse and where the medical man certifying is the medical officer of that institution. It is not necessary that the patient should be in receipt of relief or be made a pauper for the justice to accept one certificate and summon one medical man to his aid. Section 18 of the Lunacy Act provides that the justice has to be satisfied that the lunatic is in such circumstances as to require relief for his proper care. "If the justice is so satisfied the lunatic shall be deemed to be a pauper" for the time being. He can then, by Section 16, act with one medical certificate only. Section 18 appears to give the justice discretionary power to consider the lunatic a pauper under certain conditions. That this is the correct reading of the Act is further supported by Section 20, which authorises a constable, relieving officer, or overseer to remove a lunatic to the workhouse, whether pauper or not; and the justice can act with one medical certificate, as in Form 8, which says nothing about the patient being a "pauper." In point of fact, a considerable proportion of London lunatics are removed to an asylum in this way—i.e., lunatics belonging to the middle- and lower middle-classes. They are not, and do not, thereby become paupers, but they pass *through the workhouse*, the one medical signatory being mostly the *medical officer of the workhouse*. Nevertheless, although the law stands thus in such cases, it is extremely desirable in the interests of the patient and of all concerned that two medical certificates should be obtained in cases which do *not* pass through the workhouse and where neither of the certifying medical men is the medical officer of that institution, as provided in Section 13. It is, indeed, a grave question whether such action as that mentioned by our correspondent is not distinctly illegal, for by Section 13 (2) unless the lunatic is a pauper or wandering at large two medical certificates are necessary. The point might well be laid before the Local Government Board either by a parochial medical officer or by the clerk to the guardians for decision. It rests with the medical superintendent of the asylum to which a lunatic is sent to refuse admission if the certification is irregular; and in such case the matter would probably be referred to the Lunacy Commissioners. Combined action of the medical practitioners of the district such as that contemplated is to be deprecated, at any rate, until the Local Government Board and the Lunacy Commissioners have been approached and a typical case has been laid before them.

QUID PRO QUO IN MONEY-LENDING.

THE generous money-lender is a person with whose kind offers of assistance probably every medical practitioner is familiar. His prodigal advertisements leave nothing to be desired. His purse is as full as it is free to the borrower. He asks for no proofs of solvency, for no security beyond a note of hand, and he abjures the inconvenient restraint of legal formalities. His delicate consideration is equal to his liberality, for he would have all communications guarded by the seal of privacy, third parties being entirely superfluous. Nothing could be more business-like than the celerity of his arrangements. There is but a promise on either side and the money flows over. All this no doubt looks excellent, but it has one fault. It is obviously ideal and unpractical. The demand is

not seen creating the supply but the supply creating the demand and ignoring risk—a pretty good sign that the wares and the market are not above suspicion. We are aware that medical practitioners no less than other persons are liable at times to an unavoidable tightening of means and that advances like those described above may naturally in such a case be expected to attract them. We may be excused for reminding them, however, that there are two sides to a loan as to every other bargain. The *quid pro quo* may be little spoken of, but it will be exacted nevertheless. The need of mutual guarantees and legal safeguards cannot, therefore, be dispensed with, however suave the lender's inducements. A prompt repayment may indeed remove all hazards, but where this can be relied upon the generous money-lender is not likely to be applied to. His offer is made rather to the unsecured poor man, by whom the promissory limit may easily be passed and with it goes the written guarantee for easy terms of interest and repayment. Young practitioners are especially liable to be snared by an offer of this kind and it is they to whom we would more particularly address a word of warning. Professional work of some sort can usually be obtained by one who is qualified to undertake it and the profits of such work, if not always large, are fairly reliable. They are at all times more worthy to be sought than the specious lure of a monetary loan by unknown persons with its millstone of prolonged and anxious responsibility. It is not required of the junior practitioner, however brilliant, that he should sacrifice every other good and even imperil his probity in order to purchase fame. A more moderate, even an obscurer, course will often bring him sooner to his goal. After all, there is no road to fame but through duty, and this latter does not consent to the reckless accumulation of debt. To live beholden to no one for the means of living is the best proof of that character which is essential to success; if in any case an advance is unavoidable it should certainly not be arranged on the unsteady basis of a money-lender's advertisement.

PLAGUE ON BOARD THE STEAMSHIP "CARTHAGE."

FOR a second time during the present plague prevalence in Bombay and Western India the disease has occurred on a ship bound for ports of this country. The case is that of the Peninsular and Oriental Company's steamer *Carthage*, on board which a coal-trimmer sickened with plague on July 6th. Two days later he was landed at Aden with the two members of the crew who had been told off to attend to him. But on the 14th—namely, six days after passing Aden—a second coal-trimmer was found to have slight symptoms of plague, and when the *Carthage* passed Malta the fact was announced by telegram to this country. The *Carthage* had intended to land passengers at Marseilles, but, doubtless, having regard to the panic which took place there in 1896-97 at the mere prospect of such an occurrence, the company decided that the vessel should come straight to this country, where it was certain that no panic measures would be taken. During the voyage and on the occurrence of both attacks the medical arrangements on board seem to have been excellent, the patients and their attendants being isolated in a large boat hung at a height above the side of the vessel in such a way as to avoid communication with others on the ship and at the same time to ensure every necessary comfort for the patients. On receiving the news from Malta the medical officer of the Local Government Board placed himself in communication both with the company and with the medical officers of health of Plymouth and the Port of London, and he found that the arrangements both on board and in these two excellently administered ports were such that no anxiety need be apprehended; and, as a matter of fact, the ordinary requirements of the Government order as to plague having been observed at both the English ports with which the *Carthage* communicated, passengers were allowed to land on giving their addresses. In the Port of London it was necessary to do little further than to isolate the second patient and his two attendants in the port hospital for a day or two so as to be quite certain that recovery and freedom from infection were complete. The *Carthage* was well appointed to deal with infection on board: she had a steam disinfector and ample appliances for disinfecting the localities occupied by the two plague patients, and her medical officer was fully conversant with the precautions which were necessary for the protection of the passengers and others. Indeed, the story of the *Carthage*, taken together with that of the vessels found two years ago to be infected on arrival in the port of London, goes fully to justify the opinion that, subject to due precautions at the port of departure and to proper administration on board ship, plague is a disease which may be easily checked on board a healthy and well-appointed ship at sea. Indeed, when account is taken of the great precautions which are always observed in the case of plague, we shall probably not be going too far when we say that on board such a ship as is now in question plague has less chances of spreading than would be the case if a passenger were attacked with scarlet fever or some other of our current infectious fevers. Great gain has also been achieved since the Venice Conference of 1897, for it is certain that before that date no ship in which plague had occurred between Bombay and Suez would have been allowed to pass through the Suez Canal merely after satisfying the local officials that all due precautions as to disinfection, &c., had been adopted. The case proves that the terms of the Venice Convention are ample to prevent the spread of the disease to European ports when cleanly and properly appointed vessels are in question, and it is only for such vessels that we in this country desire any leniency or any limit to the restrictions strictly demanded by medical and public health considerations.

BRITISH COLUMBIA MEDICAL REGISTER.

THE British Columbia Medical Register for the year 1898 is a pamphlet of 46 pages, printed at New Westminster by Messrs. Jackson and Co. Twenty pages are occupied with a Medical Act divided into 83 sections, a few of which, commencing with the opening paragraph, are as follows: "An Act respecting the profession of Medicine and Surgery. Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows: 1. This Act may be cited as the 'Medical Act, 1898.' 2. The members of the medical profession of British Columbia heretofore incorporated under the name of 'The Medical Council of British Columbia' shall be deemed to be and to have been from its first establishment a body corporate by the name aforesaid, and the said name is hereby changed to that of 'The College of Physicians and Surgeons of British Columbia.' ..... 3. Every person registered according to the provisions of the 'Medical Act' and any other Act of the Legislature of British Columbia relating to the medical profession shall be a member of the said 'College of Physicians and Surgeons of British Columbia.' 4. Every person hereafter registered under the provisions of this Act shall also be a member of the said College. ..... 24. ..... The Council shall admit upon the Register any person who shall produce from any college or school of medicine and surgery, requiring at least four years' course of study, a diploma of qualification ..... provided also that the applicant shall furnish to the Council satisfactory evidence of identification and pass before the

members thereof ..... a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon. ..... 63. If any person not registered pursuant to this Act, for hire, gain, or hope of reward, practice or profess to practice medicine, surgery, or midwifery or advertise to give advice in medicine, surgery, or midwifery, he shall, upon summary conviction thereof before any Justice of the Peace, for any and every such offence pay a penalty not exceeding one hundred dollars." The typography of the Act and several subjoined pages is unfortunately disfigured by numerous misprints. There are 193 names of practitioners on the Register. Several examination papers are given which have presumably been already made use of, although the fact is not expressly stated. The one on chemistry does not present any considerable difficulties, whereas the one on theory and practice of medicine contains the following: "Give the microscopical appearances of the bacillus coli communis, the typhoid bacillus, the bacillus diphtheria (*sic*), the bacillus of leprosy, and that of syphilis."

THE PRINCE OF WALES.

As the accounts given in the daily press clearly indicate, the progress of His Royal Highness the Prince of Wales during the past week has been quite satisfactory to his surgeons. There have been no local complications and the general good health of the illustrious patient has been maintained. The extravasation in the joint has now almost completely subsided, and the small detached portion of patella and the ruptured tendon are effectively controlled by the apparatus. All the details necessary for his safe transport to the royal yacht *Osborne* in the Solent to-morrow (Saturday) have been carefully thought out and provided for and the fresh sea air and a change of scene cannot fail to be beneficial. His Royal Highness will travel in the train used by Her Majesty, and as it will reach Portsmouth at the proper time of tide there will be no hitch in the transference from the train to the yacht. In addition to Sir Francis Laking, both Sir William MacCormac and Mr. Fripp will accompany the Prince. The last-named gentleman will continue in attendance at Cowes, while Sir William MacCormac will go down from town to see His Royal Highness as often as may seem desirable.

HYSTERIA IN THE LOWER ANIMALS.

DR. H. HIGIER of Warsaw describes in the *Neurologisches Centralblatt* (No. 13, 1898) two instances of what he regards as hysteria occurring in the cat and the canary-bird respectively. The cat, which was nine months old, healthy and active, was one day deeply bitten in the back by a dog and immediately fell down paralysed. When Dr. Higier first saw it, five or six weeks after the injury, it walked only with its fore-paws, dragging its body and hind-paws. There was complete loss of sensation in the hind-paws and in the hinder third of the body, both sides of the abdomen and back of the animal being indifferent to deep punctures with a needle and to hot applications, but it always responded to gentle touching of the anterior half of the body. The tail was also paralysed, but there was no muscular atrophy of the hind limbs in comparison with the anterior part of the body, neither was there incontinence of urine or fæces, in which respect only did the symptoms differ from those of paraplegia intentionally induced by section of the spinal cord. Dr. Higier considered the lesion to be traumatic dorsal myelitis until one day the servant girl, being curious to see whether the cat would fall on all fours as cats usually do, threw it from the first-floor of the house on to the pavement. As a matter of fact, it alighted on all four feet, immediately ran away, and was, contrary to expectation, completely cured of its sensory-motor paraplegia which had lasted for more than two months. Dr. Higier based the diagnosis of hysteria on the sudden onset and equally sudden disappearance of the paralysis, together with the retention of control over the rectum and bladder. The mother of this cat had repeatedly during the last weeks of pregnancy suffered from general clonic convulsions without loss of consciousness (? chorea gravidarum). Dr. Higier's second case of hysteria showed itself in a canary-bird whose cage with the bird in it was pulled down from the wall by a cat, but Dr. Higier interposed before the cat seized it. The bird lay on the bottom of the cage, stiff as if dead, but was revived by sprinkling with cold water, after which it was lively, took its food well, and showed no abnormality except that from having been a fine singer it became silent. After six weeks this condition of aphonia passed off quite unexpectedly, and the canary once more sang very well. Dr. Higier also refers to three cases mentioned by Gilles de la Tourette in which dogs showed hysterical symptoms.

REMOVAL OF A BULLET FROM THE BODY OF THE AXIS AFTER ITS LOCALISATION BY SKIAGRAPHY.

IN the *Intercolonial Medical Journal of Australasia* Dr. F. Bird has published a case of this novel operation which certainly could never have been carried out without the aid of skiagraphy. The operation was performed more than three months after the injury, at the earnest solicitation of the patient, who suffered a good deal from deep cervical pains on the left side and stiffness of the neck. A 3 in. incision was made along the posterior border of the sterno-mastoid muscle in order to gain access to the lateral aspect of the second and third cervical vertebræ. The dissection was continued until the descending fibres of the first bundle of the levator anguli scapulæ were well defined in their upper two inches. The great vessels and nerves were held forward and search was made for the bullet. It could be neither seen nor felt, but the transverse process of the axis was in advance of the next. On holding the pharynx forward the dark bullet was seen buried in the body of the axis. Bone had to be snipped away before it could be extracted. Recovery followed.

THE SCHOOLMASTER ABROAD.

A CORRESPONDENT sends us from Skye an account of a state of matters unfortunately too common—namely, the harm wrought by an utterly ignorant unqualified practitioner. The practitioner in question is a schoolmaster and therefore it is to be hoped a man of some education. Our correspondent, who is a medical man, tells us that he was called to see a patient who had previously been treated by a schoolmaster for an affection of the eye. The schoolmaster said that the patient had an ulcer and gave him a bottle of medicine. Six weeks later our correspondent saw the sufferer and found "intense keratitis and conjunctivitis and in the centre of the cornea a foreign body" which after removal was examined under the microscope and proved to be the scale of a fish. The schoolmaster in question is also said to treat specially girls suffering from amenorrhœa, a statement which may mean nothing or may mean a great deal. He is also understood to receive a fee of 1*s.* for medicine supplied. Now this is a most scandalous state of things, but we are sorrowfully compelled to admit that the chances of stopping such practices are remote. In the first place, the law as it now stands is so impotent that any person whosoever, however ignorant, may treat any patient who is weak enough to go to him, provided only that the self-elected practitioner does not call himself by any "name, title, addition, or description implying that ..... he is recognised by law as a physician," &c., or imply by the use of any title or letters that he is a qualified practitioner. The only method by

which he might be brought to justice is by means of a prosecution under the Pharmacy Act and that only if he has sold medicines containing certain poisons mentioned in that Act. Whether the Education Department has any legal right to interfere with the occupations of one of their employés out of school hours is doubtful, but we desire to draw the attention of the department to the fact that a practitioner of this sort is quite as dangerous as a defective drain and infinitely more to be condemned than an absence of hat-pegs.

THE GOLDEN WEDDING OF SIR JOHN SIMON.

WE have the greatest pleasure in offering our congratulations on the occasion of their golden wedding to Sir John and Lady Simon. Few members of our profession have lived a longer life of usefulness than Sir John Simon or can flatter themselves more truthfully that they have contributed largely to the happiness and longevity of others. We fear that the events of the last week must give him some unpleasant impressions of the weakness of our legislators in dealing with great questions of public health. But nothing can efface the work of Sir John Simon or affect the satisfaction with which his friends contemplate the effects of it in this and other countries.

THE CRUDE SEWAGE OF LONDON.

WE have received the report made by Dr. Frank Clowes, chemist to the London County Council, to his council on the bacteriological examination of London crude sewage. The report, though handed to the council by Dr. Clowes, is really the work of Dr. A. C. Houston, who was appointed by the council in February last to coöperate with Dr. Clowes as bacteriologist in the experimental treatment of the crude sewage at Crossness by filtration through coke. The report is only to be regarded as a preliminary statement of the progress of the work, as it would be impossible to adequately deal with the bacteriology of sewage after only a few months' attention. However, it contains a description of some of the methods used in the bacteriological examination of sewage, together with a summary of results of experiments and photographs of some of the bacteria found in London crude sewage, which should be of permanent value to the council's staff at the outfalls as well as to others who are not immediately connected with the council.

A LIVING CHILD DISINTERRED FROM AN ASHPIT.

A CASE presenting several interesting medico-legal features formed the subject of an inquest held by Mr. Birks, coroner for Holderness, Hull, on July 18th. From the report published in the *Eastern Morning News* it appears that the deceased was an unmarried woman, thirty-eight years of age, that she had for seven months been servant to a labourer whose wife was an invalid, and that he did not know she was pregnant. On July 16th she complained of lumbago, but declined to have medical attendance and did her work as usual. On July 17th (Sunday), at dawn, before sunrise—i.e., before 4 A.M.—the man heard her moving about downstairs, and after a few minutes he heard her come up again. He got up about ten minutes past eight, called out to her as he went downstairs, and she said she was a little better and would get up soon. About 11 A.M. he procured the assistance of a neighbour, a woman, to whom the deceased admitted that she had had a child and had buried it in the ashpit; she also said the child "belonged to nobody here," and became unconscious, dying before the arrival of the medical man. There was a great deal of blood about the room. Mr. Edward Harrison, assistant surgeon to the Hull Royal Infirmary, who arrived at the house after the death, found the baby buried in the ashpit covered with ashes and the emptyings of the privy to the depth of about 6 in. He was led to the spot by hearing it crying under the filth. The cord, about 18 in. of which was attached to the child, had been torn through. The child was discovered at 12.10 P.M., and it had probably been there since 3 A.M.—viz., about nine hours. According to the man's evidence it must have been there from 8 A.M., or at least four hours, but from what Mr. Harrison could learn the time was most probably nine hours. The inference was that the child was born before 4 A.M., that the deceased tore through the cord, carried the child downstairs, buried it, and returned to bed, and that hæmorrhage occurred subsequently from partial detachment of the placenta. The post-mortem examination showed very little blood in the body, the heart and great vessels being practically empty. The placenta was in the uterus, the greater part of it being attached to, but easily separable from, the uterine wall; a portion of about the size of the palm of the hand was detached, from which the bleeding had evidently taken place. The perineum was rent as far as the anus. There was no evidence of previous pregnancy. There was a small scirrhus in the left breast. The child was in a vigorous condition on July 19th.

THE LONDON UNIVERSITY COMMISSION.

THE Bill for appointing a statutory Commission to deal with the questions arising from the reconstitution of the University of London passed through the Committee stage of the House of Commons at an early hour on Tuesday morning, and was also allowed a third reading. The amendments which were rejected by the Standing Committee, to which the Bill had been referred, were all again submitted to the House but were again rejected by very large majorities. Sir John Gorst, who had charge of the Bill, refused to consider any amendment which would damage the scheme, and so it has practically passed unaltered through both Houses of Parliament. We still think that a local teaching university distinct from the Imperial Examining Board would have been the better solution of the difficulty, but next to this a dual university under a single Senate is undoubtedly the best plan. We hope that the Commission will soon enter on its duties and that medical students in London will have their present cumbrous system of examinations considerably simplified and be able to obtain degrees on similar terms to those which now exist in the provincial and Scottish universities. After many years of struggle this movement, begun by the late Dr. Moxon and the late Dr. Wilson Fox, appears to have reached a successful issue.

THE SURGICAL TREATMENT OF INTESTINAL TUBERCULOSIS.

THE *Journal* of the American Medical Association, May 21st, 1898, contains a useful paper by Dr. N. Senn, which collates the facts referring to this comparatively novel question. It is only primary and localised intestinal tuberculosis which can be considered suitable for operation. The first method of treatment mentioned is laparotomy and the application of iodoform. It is not strange that this procedure, which has been found successful in peritoneal tuberculosis, should prove efficacious in intestinal. Dr. Senn has no doubt that the use of iodoform is of value in tuberculous peritonitis, for recovery in one case followed its use where laparotomy and drainage had twice failed. To return to intestinal disease. In the case of a child recorded by Nové-Josserand the cæcum and colon, which were extensively affected, were dusted with iodoform and recovery resulted. Enteroplasty (similar to pyloroplasty of Heineke-Mikulicz for pyloric stenosis) for stricture following the healing of solitary tuberculous ulcer has been

successful (Péan). Enterectomy has been performed for intestinal tuberculosis and in well selected cases yields good results. In one case Dr. Senn resected the cæcum and 18 inches of the ileum and performed lateral anastomosis with the aid of decalcified bone-plates. The patient recovered but died six months later from recurrence. But in some cases resection may be too severe an operation; then entero-anastomosis may be performed. It relieves the intestinal obstruction caused by cicatricial stenosis and secures rest for the affected part. In a boy, aged sixteen years, with acute obstruction Dr. Senn performed ileo-ileostomy. The patient recovered and was in almost perfect health two years afterwards. In several cases of tuberculosis of the cæcum entero-anastomosis has been successfully performed by different surgeons.

THE NATIONAL PROTECTION OF CHILDREN.

THE Prince of Wales, in his recent speech at the dinner of the National Society for the Prevention of Cruelty to Children, laid emphasis on the position of the society as an educator. He was able to show that it had in many instances been the means of reviving and stimulating that parental feeling which appears to exist in some degree even in the most cruel father or mother. This result, which, after all, is the ultimate object of the society's creation, is one which many persons are apt to ignore. Mere punishment even as a measure of justice finds, as we have often shown, no place in its system of work. It is the last resort and its aim is always to reform as much as to chastise or to protect. The speech of Lord Herschell on this occasion, the more weighty as being that of one who knows more about the society's affairs than any other non-official person, leaves no doubt on this point. Further, in spite of a sympathy which all must share with the view that needless interference between parents and children is to be avoided, he has arrived at a perfectly clear decision that unfortunately human nature—even that of parents—is still such that the society's operations are indispensable. In common with the Royal chairman he regrets that notwithstanding an increasing revenue as much as one-third of the United Kingdom is still outside the area of its beneficent exertions. At the dinner the sum of £5010 was collected. This more than sufficed to cover a deficit of £2000 which remained to be met. When we reflect, however, that in order to defray last year's working expenses a sum of £53,000 had to be provided, of which £51,000 had been actually subscribed, it will be seen that ample and willing as has been the support accorded to the society, such aid must be largely increased before the required extension of its field of labour can be carried out. The handsome total contributed at the annual dinner may, we trust, be regarded as an augury of increase during the current year.

AT the thirty-first meeting of the Royal Commission on the Water-supply of London, which was held on Monday last in the Guildhall, Westminster, it was decided to adjourn the sittings of the Commission until next November. We shall publish next week our usual full report of the proceedings and we advise those of our readers who are interested in this important question to run through our previous articles on the subject before the sittings recommence. For the water-supply of London is a matter not only of medical importance, but of national urgency.

DR. W. J. COLLINS, late Chairman of the London County Council, was presented on Tuesday afternoon last with a massive silver tray and claret-bowl and two cups. The following inscription was engraved upon the tray:—"Presented to Dr. William Job Collins on the occasion of his marriage, August, 1898, by his colleagues of the London County Council, as a mark of personal regard and of their high appreciation of his services as an able and impartial chairman of the council." The chief officials of the council presented to Dr. Collins a silver bowl.

THE current number of *Punch* has a cartoon from Mr. Linley Sambourne's mordant pencil which will give some halting politicians cause to think. Death with a ready scythe welcomes the new Vaccination Bill brandishing the document in his bony arms and placing his foot on THE LANCET.

A MEETING of the Council of the Metropolitan Hospital Sunday Fund will be held at the Mansion House no Wednesday, Aug. 3rd, to receive the report of the Committee of Distribution and to order payment of awards to hospitals and dispensaries.

DR. CHEADLE, senior physician of St. Mary's Hospital, has presented the medical school with the sum of £500 to found a gold medal in clinical medicine.

THE library of the Royal Medical and Chirurgical Society, 20, Hanover-square, W., will be closed from Aug. 1st to 31st, both days inclusive.

PROFESSOR W. H. CORFIELD, M.D. Oxon., has been appointed honorary sanitary adviser to University College and Hospital.

DANGEROUS TRADES.

(BY A MEMBER OF ONE OF THE ASQUITH COMMITTEES ON DANGEROUS TRADES).

"BUT it was generally the case that when once a difficulty of this kind had to be faced invention came in. It was so in the case of gunpowder in mines. The Home Office had to prohibit the use of blasting powder in certain mines and soon after a simple method of rendering blasting powder harmless was discovered."—Report in daily paper of the Home Secretary's reply to a deputation on the manufacture of phosphorus matches, July 21st, 1898.

IN the sentence I have quoted at the head of this article the Home Secretary has clearly indicated the way in which a solution of the problem of dangerous trades can be found. The attempt to remove the dangers by means of special rules drawn up by the Home Office has proved a failure in all the more serious cases. When Mr. Asquith appointed committees of inquiry in 1893 I think we all believed that we could draw up special rules which would practically remove the evils complained of, but the experience gained since then has shown very clearly that it is only by revolutionising the industries themselves that we can hope to find a remedy of any value. Comparative statistics to support this statement are wanting, but the fact that 1214 cases of industrial lead-poisoning were reported in 1897 alone is sufficient to show that the special rules have failed in their purpose. These figures are the more significant when we find that about 70 per cent. of the cases occurred in industries which have been working under the special rules, and it would probably not be overstating the case if we multiplied these figures by ten in order to arrive at the actual as distinguished from the reported cases.

I am, of course, aware that it may be said that the special rules have never had a fair trial. The public were, I think, surprised to learn the other day from the law officers of the Crown that as the law now stands special rules drawn up by the Home Office have to be submitted to the employer and if he objects to them he can demand arbitration (Section 8, Factory Act, 1891). As any employer affected may do this the Home Office has been forced to frame the special rules so as to suit the wishes of the manufacturers and the result of this has been to weaken these special rules very seriously. A striking example of this is to be found in the special rules drawn up for manufacturers of china. After the chinaware has been dried it is packed with flint dust in large earthenware "saggers" for baking. After the baking is over this flint dust is brushed off the ware by women, the

process being known technically as china scouring. During this process this flint dust rises in such dense clouds that I have seen it pouring through an open window like smoke. If this dust is examined under the microscope it is seen to consist of sharp, jagged pieces and Dr. Arlidge has shown that it sets up violent local irritation of the lungs, leading to disease and early death. How long women can live at this employment I do not know, but the belief among the workers in the potteries is that it usually causes death in from two to three years. Now, in the best china factories there is an arrangement of mechanical brushes and fans by which the whole of the dust is removed and never escapes into the room, and it was proposed by the committee of inquiry that such mechanical ventilation should be enforced in all cases of china scouring. This proposal was strongly objected to on the part of the employers on the ground that the smaller manufacturers of china could not afford to put in mechanical power and was consequently struck out of the special rules in their final form and replaced by that convenient word "efficient."

The Home Office are now trying in their new proposed rules to introduce mechanical ventilation for china scouring but are not likely to succeed. There can be no doubt, therefore, that as long as the manufacturers are practically allowed to draw up their own special rules for the Home Office to endorse little improvement can be hoped for, and an amending Act increasing the powers of the Home Office in this direction is urgently needed. It is true there is a clause in the Act of 1895 (Section 28) which was, I believe, intended to give the Home Office the necessary power and seems to do so when read by the layman, but the law officers of the Crown have decided differently.

But while admitting all this it is my special purpose to show that such measures are inadequate and that no arrangements requiring soap and nail brushes to be provided by the manufacturer or overalls and head-coverings to be worn by the workmen are going to remove the dangers caused by the dissemination through the air of compounds of lead or phosphorus. Work in a match factory means constant inhaling of phosphorus vapour, while work in a whitelead works or the dipping-house of a pottery means having the air full of carbonate of lead and getting covered with dust and breathing it in, and getting the clothes, the skin, the hair, and the nostrils loaded with carbonate of lead. If respirators are worn after two or three hours there is more lead inside them than outside them. The first time I saw girls in a whitelead works with their lips white with lead dust I realised the futility of special rules. Such industries must be revolutionised and the problem before us is how to do it. It is, of course, quite useless for the Home Office to make inquiries into the practicability of new processes or to attempt to devise new inventions on their own account. They cannot be competent for such a task, and even if they were could never convince the manufacturer. Let us suppose, for instance, that Dr. Oliver and Dr. Thorpe report, and report quite rightly, that there is no need to use raw lead in glazing earthenware. This will merely remain a pious opinion and will not convince a single potter in Staffordshire. The true way out of the difficulty has been pointed out by the Home Secretary in the quotation at the head of this article. The Home Office must so devise its regulations that it pays the manufacturer better to use an innocuous process. Then what was impossible will become possible and the necessary inventions will be made as soon as there is money in them. Now there are three ways in which this can be done—namely, prohibition, extension of the Compensation Act, and special rules with exemptions.

To take prohibition first, we have already a precedent for this in the Mines Regulation Act, and there is no obvious reason why we should not allow a man to be blown up by gunpowder but permit him to be poisoned by lead or phosphorus. As a first experiment in this direction the Home Secretary might well introduce a short Bill prohibiting the manufacture of matches with yellow phosphorus. The Home Secretary argues against the necessity of this on the ground that the cases of necrosis have been confined to one factory. He should have said the reported cases. Knowing as we do that the discovery of these cases, which had been going on for years, was due to the accident of an inquest and the energy of a newspaper reporter, what confidence can we place in the statement of the Home Secretary that such cases have not occurred elsewhere? It is surely a remarkable fact that phosphorus should confine itself to attacking only the workers in the factory which happens to be investigated by those outside the official ring.

A thorough inquiry will, I believe, show that there is a very strong case here for prohibition, while the trade to be dealt with is so small and the inconvenience to the public so slight that we could hardly take a better case for our first experiment. The whole number of match factories in the country amount to 25 and the whole number of men, women, and children employed amount to 3610. Many of these are already making safety matches and if proper notice were given the remainder could be similarly employed. Then we have no reason to believe that a "strike anywhere" match without yellow phosphorus cannot be made. Receipts are given in the technical books and the minute that there is money in a match without phosphorus plenty will be forthcoming. I should not be surprised to find that the mere threat of prohibition started match manufacturers experimenting and that since the Home Secretary's speech on July 21st all such experiments have ceased.

The next step proposed is the extension of the Compensation Act so as to cover injuries to health as well as accidents. This was proposed by Mr. Asquith as the Bill was passing through the House of Commons and Mr. Hedderwick has brought in a short Bill this year with the same object. The best plan probably would be to take such injuries to health as have been scheduled by the Home Office and of which returns have to be made, such as lead, phosphorus, and anthrax poisoning, and bring them under the operation of the Act. Such an extension of the Act would stimulate enormously the invention of innocuous substitutes for lead and phosphorus. For instance, the whitelead works would find themselves faced with such a heavy charge for insurance that instead of opposing the introduction of whitelead substitutes they would begin to use their enormous resources and vast trade connexions to introduce such substitutes themselves. Several good substitutes are known and few of them are now protected by patent, the inventors having failed miserably in their attempts to introduce them. So the way is open and the change will be made if there is money in it.

The third proposal is the drawing up of special rules with exemptions. An example taken from the pottery industry will perhaps show most clearly how this can be done. It is usual in the operations connected with dipping and printing the ware to employ a considerable number of children and young persons, who are thus brought in contact with lead in the soluble form of the carbonate. On the other hand, it has been shown by the firm of Mintons that the lead can quite well be fused before use into a glass or frit consisting of borates and silicates of lead, which if properly prepared are practically insoluble in the stomach. Furthermore, it has recently been proved that it is possibel to make a satisfactory leadless glaze. Yet in spite of the examples of Mintons before them, who have successfully fritted their lead for years, the pottery manufacturers refuse to give up the use of carbonate of lead. This may ultimately be a case for prohibition, but in the meantime a great deal could be done by raising the age of those employed in contact with lead from fourteen to eighteen years and granting exemption from this rule to those potters who have adopted a glaze which the Home Office after examination has passed as innocuous. This would so increase the cost of manufacture from the higher rate of wages to be paid that lead frits or leadless glazes would probably be quickly adopted. There are many other trades in which a similar plan might well be tried.

I have now, I think, sufficiently developed and replied to the text for which I have to thank the Home Secretary and may add a word or two about the Home Office itself. The factory department of the Home Office had formerly little to do beyond registering the ages and hours of work of women and children and ordering the fencing of machinery. But gradually it has been dawning on the public that a large number of industries on which our national wealth depends and in which a large proportion of our people are employed are carried on in a way which is injurious to health and that we may be paying too high a price for our manufacturing supremacy if we maintain it at the cost of the vitality of the race. Naturally we appeal to the Home Office to set such matters right and by this process the factory department, once an insignificant portion, is finding itself with much groaning and unwillingness converted into a vast department of public health in charge of some of the most vital problems dealing with the nation's welfare. Now for such a department of public health expert knowledge and expert training are necessary. The first step in the right direction was taken in the appointment of a distinguished public

health officer to the head of the department. But this is not enough. Both inside and outside the department as inspectors and as officials we should have medical men thoroughly trained in public health work who might, if necessary, combine the duties of factory inspectors and certifying surgeons, and if, at the same time, the committee of inquiry into dangerous trades, which is still sitting, is made into a permanent bureau for the collection of accurate information the factory department of the Home Office will be capable of dealing with the enormous field of work before it and become the guardian of our public health.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897:—

Circuit No. 5.—Dr. Frederick Blakesley Mallett, Bolton; Dr. James Corns, Oldham; Dr. James Holmes, Manchester; and Dr. Joseph Henry, Rochdale.

Circuit No. 8.—Dr. William Thorburn, Dr. Samuel Buckley, Dr. Abraham Emrys Jones, Mr. Judson Sykes Bury, Mr. George Arthur Wright, and Dr. Simeon Holgate Owen, Manchester.

Circuit No. 13.—Mr. Rutherfoord John Pye-Smith and Mr. Archibald William Cuff, Sheffield; and Dr. Henry Waytes Pomfret, Manchester.

Circuit No. 14.—Mr. Walter Thompson, Mr. Walter Henry Brown, and Mr. Charles James Wright, Leeds; and Mr. William Kitson Clayton, Wakefield.

Circuit No. 16.—Dr. Charles H. Milburn and Mr. Thomas Melancthon Evans, Hull; Mr. John Dickinson Leigh, Scarborough; and Dr. John Fletcher Horne, Barnsley.

Circuit No. 25.—Mr. Matthew Arden Messiter, Dudley; Mr. Thomas Vincent Jackson, Wolverhampton; Mr. Henry William Langley Browne, West Bromwich; Mr. George Arthur Phillips, Walsall; and Mr. Christopher Atkinson Newnham, Wolverhampton.

Circuit No. 33.—Mr. Charles Hunter Graham, Lowestoft; and Dr. William Alfred Elliston, Ipswich.

Circuit No. 40.—Mr. George Paddock Bate, 412, Bethnal Green-road; Mr. Frederick John Smith, 4, Christopher-street, Finsbury-square; and Mr. Bertram Goddard, 27, Pentonville-road.

Circuit No. 41.—Mr. Alfred Herbert Tubby, 25, Weymouth-street, Portland-place; and Mr. H. Martin Jordan, 9, John-street, Adelphi, W.C.

Circuit No. 45 (further appointment).—Mr. Felix Charles Kempster, 79, Bridge-road, Battersea.

Circuit No. 49.—Dr. Thomas Whitehead Reid, Canterbury; Dr. Charles Parsons, Dover; Dr. Thomas George Styan, Ramsgate; and Mr. James Vincent Bell, Rochester.

Circuit No. 50.—Mr. Ebenezer Snell, Brighton.

Circuit No. 54.—Dr. Bertram Mitford Heron Rogers, Clifton; and Mr. James Paul Bush, Clifton.

Circuit No. 58.—Dr. J. Raglan Thomas and Dr. John Woodman, Exeter; Mr. John Henry Square May and Mr. Charles Hamilton Whiteford, Plymouth; and Mr. J. Snowden Smith, Tavistock.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6423 births and 3356 deaths were registered during the week ending July 23rd. The annual rate of mortality in these towns, which had been 14·7 per 1000 in each of the two preceding weeks, rose again last week to 15·6. In London the rate was 15·4 per 1000, while it averaged 15·7 in the thirty-two provincial towns. The lowest rates in these towns were 4·6 in Croydon, 10·7 in Huddersfield, 10·9 in Hull, and 11·3 in Nottingham and in Halifax; the highest rates were 18·9 in Birkenhead, 19·6 in Gateshead, 21·1 in Liverpool, and 23·9 in Salford. The 3356 deaths included 487 which were referred to the principal zymotic diseases, against 330 and 378 in the two preceding weeks; of these, 220 resulted from diarrhœa, 93 from whooping-cough, 70 from measles, 53 from diphtheria, 26 from "fever" (principally enteric), 25 from scarlet fever, and not one from small-pox. No death from any of these diseases was recorded last week in Huddersfield or in Halifax; in the other towns they caused the lowest death-rates in Nottingham, Bolton, and Croydon, and the highest rates in West Ham, Norwich, Birkenhead, and Salford. The greatest mortality from measles occurred in Plymouth and Norwich; from whooping-cough in West Ham, Preston, Oldham, and Newcastle-upon-Tyne; from "fever" in Burnley; and from diarrhœa in Portsmouth, Birmingham, Birkenhead, and Salford. The mortality from scarlet fever showed no marked excess in any of the large towns. The 53 deaths from diphtheria included 29 in London, 6 in Leeds, 3 in West Ham, and 3 in Liverpool. No fatal case of small-pox was registered last week either in London or in any other of the thirty-three large towns; and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, July 23rd, was 2355, against 2205, 2250, and 2314 at the end of the three preceding weeks: 276 new cases were admitted during the week, against 204, 237, and 265 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 160 and 175 in the two preceding weeks, declined last week to 148, and were 31 below the corrected average. The causes of 29, or 0·9 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bradford, Hull, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the three preceding weeks from 21·1 to 18·5 per 1000, rose again to 20·1 during the week ending July 23rd, and exceeded by 4·5 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·2 in Aberdeen and 16·4 in Leith to 22·7 in Paisley and 23·8 in Perth. The 605 deaths in these towns included 55 which were referred to diarrhœa, 29 to whooping-cough, 19 to measles, 8 to scarlet fever, 5 to "fever," and 2 to diphtheria. In all, 118 deaths resulted from these principal zymotic diseases, against 96 and 93 in the two preceding weeks. These 118 deaths were equal to an annual rate of 3·9 per 1000, which was 1·6 above the mean rate last week from the same diseases in the thirty-three large English towns. The 55 fatal cases of diarrhœa showed a further increase upon recent weekly numbers, and included 38 in Glasgow. The deaths referred to whooping-cough, which had been 21 and 26 in the two preceding weeks, further rose to 29 last week, of which 10 occurred in Glasgow, 9 in Edinburgh, and 4 in Dundee. The fatal cases of measles, which had declined from 41 to 23 in the two preceding weeks, further fell to 19 last week, of which 9 were recorded in Glasgow and 6 in Dundee. The 8 deaths from scarlet fever were within one of the number in the preceding week, and included 5 in Glasgow and 3 in Edinburgh. The 5 fatal cases of "fever" corresponded with the number in the preceding week, and included 2 in Paisley. The deaths referred to diseases of the respiratory organs in these towns, which had been 106 and 76 in the two preceding weeks, were 75 last week, and were 12 below the number in the corresponding period of last year. The causes of 32, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the four preceding weeks from 22·8 to 18·5 per 1000, rose again to 22·7 during the week ending July 23rd. During the past four weeks the rate of mortality in the city has averaged 20·8 per 1000, the rate during the same period being 14·6 in London and 20.0 in Edinburgh. The 152 deaths registered in Dublin during the week under notice showed an increase of 28 upon the number in the preceding week, and included 12 which were referred to the principal zymotic diseases, against 6 and 3 in the two preceding weeks; of these, 5 resulted from whooping-cough, 4 from diarrhœa, 1 from scarlet fever, 1 from diphtheria, and 1 from "fever." These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·0 in London and 3·2 in Edinburgh. The fatal cases of whooping-cough, which had been 3 and 1 in the two preceding weeks, rose again to 5 last week. The 4 deaths from diarrhœa exceeded the number in any recent week, and the mortality from scarlet fever corresponded with that recorded in the preceding week. The 152 deaths in Dublin last week included 38 of infants under one year of age, and 31 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Seven inquest cases and 2 deaths from violence were registered; and 64, or more than a third, of

the deaths occurred in public institutions. The causes of 11, or more than 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

FLEET-SURGEON GEORGE ROBERT DEIGHTON CHARLTON has been placed on the retired list of his rank at his own request. Fleet-Surgeon Thomas Canning Hickey retires with the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are announced: — Staff Surgeons: H. J. Hadden to the *Rainbow* and A. G. Andrews to the *Thunderer*. Surgeons: John W. Craig to the *Heron*, Edward T. Meagher to the *Caledonia*, and John C. Durston to be lent to the Walmer depôt. Surgeon and Agent: Arthur B. Vise at Fosdyke Station and Fleethaven.

ROYAL ARMY MEDICAL CORPS.

Major Nicholas retires on retired pay. Lieutenant-Colonel G. A. Hughes and Major J. M. Irwin have embarked for service in Egypt. Lieutenant-Colonel C. Douglas, V.C. (retired pay), takes over charge of the Station Hospital, Perth. Lieutenant R. Fawssett is directed to rejoin the Home District. Captain R. J. D. Hall has embarked for Egypt. Captain Bewley is placed under orders for Hong-Kong.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Slaughter (Army) to officiate on the Administrative Medical Staff of the Army, with the temporary rank of Surgeon-Colonel, vice Surgeon-Colonel Williamson (Army), deceased. The Viceroy and Governor-General has been pleased to make the following appointments on His Excellency's personal staff:—Surgeon-Colonel Warburton, vice Brigade-Surgeon-Lieutenant-Colonel Cunningham, retired; Surgeon-Colonel Price (Army), vice Surgeon-Colonel Atkins, vacated; and Brigade-Surgeon-Lieutenant-Colonel G. D. Bourke (Army), vice Brigade-Surgeon-Lieutenant-Colonel Edge, vacated. Surgeon-Lieutenant-Colonel J. P. Greany and Surgeon-Lieutenant-Colonel Davidson have respectively delivered over and received charge of the Dharwar Prison. The services of Surgeon-Captain Gabbett (Madras) are replaced at the disposal of the Government of Madras. Surgeon-Captain Grant, (Bengal) is appointed to officiate as Residency Surgeon and *ex-officio* Assistant to the Resident in Nepal, vice Surgeon-Captain Armstrong, on leave, until further orders, and Surgeon-Lieutenant-Colonel Hall, Officiating Inspector-General of Civil Hospitals, North-West Provinces and Oudh, is appointed to hold charge of the office of Inspector-General of Prisons, North-West Provinces and Oudh, in addition to his other duties, from the date of taking charge.

VOLUNTEER CORPS.

Royal Engineers: 1st Gloucestershire: Surgeon-Lieutenant W. B. Fergusson to be Surgeon-Captain. *Rifle:* 3rd Volunteer Battalion the Queen's (Royal West Surrey Regiment): Josiah Field Hall to be Surgeon-Lieutenant. 3rd Volunteer Battalion the Welsh Regiment: The retirement of Surgeon-Major Evan Jones is cancelled.

THE SPANISH-AMERICAN WAR.

Until Wednesday there had been a comparative lull in the news and progress of events since the destruction of Admiral Cervera's fleet and the capitulation of the Spanish garrison of Santiago and the capture of that place by the Americans. On that day, however, news came that the Spanish Government had through the French Ambassador asked for a cessation of hostilities in order that terms of peace might be considered. A difficulty with which the United States Government are at present confronted is with respect to the Cuban insurgents and the future policy to be adopted in regard to them and to the island and its inhabitants, who have set up a claim for the establishment of a Cuban Republic. It will be very interesting to know how the Washington Cabinet will deal with the various and rather difficult problems which must have been foreseen from the first but with which they are now face to face. Meanwhile the war is going on, the invasion of Puerto Rico has begun, and the fall of Manila must soon occur. The American troops in and around Santiago have suffered greatly from heat and malaria and there are a large number of sick. This gives rise to a large amount of extra work falling upon those remaining well in the way of guards and night duty, and the physical strain entailed on the troops in these respects, unless soon relieved, must probably be followed by an increased amount of ineffectiveness from fatigue and sickness. Sanitary precautions and measures are being carried out on a large scale, but these necessarily take time to effect. The Americans will lose no opportunity, we may feel assured, of camping as many of their troops as possible in any available uplands in the vicinity of Santiago and in transporting to America such invalid soldiers as are not soon likely to render effective service in the field. Those engaged in ambulance work about Santiago must have had a trying and perilous time of it according to a letter written by Mrs. Porter, the wife of President McKinley's secretary, who went to Santiago with the Red Cross Society. Mrs. Porter writes on July 8th describing the measures taken in the aid and care of the wounded and says: "The Spanish wounded captives expressed much gratitude at being given the same attention as the Americans. In several cases wounded men were shot dead as they lay in the Red Cross litters *en route* to the hospitals. This firing upon the wounded and those who were caring for them so increased that the surgeons operated by moonlight, being afraid to light candles or lanterns lest the Spanish sharpshooters should pick them off."

A FRENCH ARMY SURGEON'S EXPERIENCE OF INFLUENZA.

Duplay's *Archives* for July contain two articles by military medical officers—to wit, an "Epidemiological Study" of Influenza and the Diseases that may be Evolved Simultaneously, by Surgeon-Major J. Marty, and the first part of a critical essay on Chloroma or green cancer by Assistant-Surgeon Gustave Lang. Quoting Fuster in Rochard's Encyclopædia of Hygiene Surgeon-Major Marty enumerates as follows the epidemics of influenza which have received historical notice since A.D. 1239: thirteenth century, 1; fourteenth, 6; fifteenth, 7; sixteenth, 17; seventeenth, 12; eighteenth, 28; and nineteenth (up to 1860), 21. Since 1860 several additional epidemics have been noted, so on the whole it is more than probable that the record for our expiring century will largely exceed that of its predecessor. Up to 1892, says Surgeon-Major Marty, atmospheric and meteorological vicissitudes were universally regarded as the cause of influenza, but Pfeiffer's bacillus, discovered in that year, soon came to be acknowledged as the specific agent of the affection, and although the researches of Tessier, Roux, and Pittion raised some doubts on the subject the general belief has not been seriously disturbed. At the same time, as was pointed out in 1895 by Bezançon in *La Médecine Moderne*, Pfeiffer's bacillus is habitually found associated with other microbes which no doubt are more or less concerned in the evolution of the malady, and the true etiology of the latter can only be arrived at through a comprehensive study of all the micro-organisms collectively as well as individually. Surgeon-Major Marty's remarks are based on his experiences at Chollet, where he was quartered for three years, from 1892 to 1895. During this period there were three distinct epidemics of influenza, each one furnishing examples of the nervous, the thoracic and the gastro-intestinal forms of the disease. The numbers are too small for generalisation, but so far as they go the deductions drawn from them are interesting. The influenza bacillus can live amicably with many of its congeners and the latter are responsible for many of the incidental phenomena. There is, however, nothing harder than to draw a line where the effect of one microbe ends and that of another begins. They all react upon each other, but the possibility of coincidence must not be forgotten.

MEDICAL INSPECTION OF FRENCH SOLDIERS PROCEEDING ON FURLOUGH.

According to a decree which was issued in October, 1892, the medical inspection of all French soldiers quitting the service for any cause or proceeding on temporary leave of absence is strictly enjoined, but apparently the latter part, at all events, of the edict has never been acted upon, being regarded as a purely theoretical ordinance. Be this as it may, a supplementary decree, dated May 6th, 1898, has now been promulgated to the following effect: "1. Soldiers desirous of obtaining leave of absence shall be inspected by a medical officer, and if found to present symptoms of any disorder, however slight and non-contagious, they shall be detained with their corps. 2. In cases when soldiers may be

granted permission as an exceptional measure to return to their families for medical treatment, commanding officers shall grant leave of absence for a period in accordance with the probable duration of the disease, but not until they have satisfied themselves that the families are in a position to receive their relatives." The Minister of War's instructions on the foregoing run as follows: "The decree is designed, so far as possible, to prevent soldiers proceeding on leave of absence while in the incubative stage of disease. The neglect of this precaution might at any moment lead to overcrowding in the civil hospitals or to sick soldiers whose state did not permit of their reception and treatment among their friends being left without an asylum."

THE HEALTH OF THE JAPANESE NAVY.

The Director-General of the Japanese Imperial Navy has just issued his report for the twenty-eighth year of Meiji (1895). The general health he states to be satisfactory. The returns of the number of cases of disease show a decrease of 53·96 per 1000, while the ratio of each day's sickness shows an increase of 0·36 per 1000 of the force when compared with the previous year. As the battle of Wei-hai-wei and the rebellion of Formosa occurred in 1895 the number of casualties was naturally greater than in an ordinary year. The ratio of cases of venereal disease and their sequels was 152·39 per 1000. The mean daily force in service for the year was 13,006 men, an increase of 2003 men over the previous year. Of the total number of 13,006 men 0·02 per cent. were under the age of fifteen years, 5·73 per cent. were between the ages of fifteen years and twenty years, 38·30 per cent. between the ages of twenty years and twenty-five years, 31·58 per cent. between the ages of twenty-five years and thirty years, 18·90 per cent. between the ages of thirty years and thirty-five years, 4·32 per cent. between the ages thirty-five years and forty years, 1·05 per cent. between the ages of forty years and forty-five years, and 0·10 per cent. between the ages of forty-five years and fifty years. As the terms of service were lengthened by the Japan-China War there were some men over forty-five years of age.

SURGEON GENERAL TAYLOR.

Surgeon-General Taylor, R.A.M.C., has, as we have stated, been selected for the appointment of Principal Medical Officer of the Anglo-Egyptian force in the forthcoming advance on Khartoum and is probably in Egypt at the present time. We presume that the size and importance of the expedition and the strength of the British contingent taking part in it were considered to be such as to warrant and require the appointment of an officer of high rank in medical charge of the expeditionary force and its sanitary and hospital arrangements in the field.

DEATHS IN THE SERVICES.

Surgeon-General William Johnston, I.M.S., Madras (retired), at his residence, Cheltenham, on July 24th. He served throughout the Chinese War and was present in ten engagements (medal with clasp). For many years he was deputy inspector of hospitals in the Madras presidency. He retired in 1876.

The appointment of Secretary to the Principal Medical Officer of Her Majesty's Forces in India will, we understand, become vacant on Aug. 14th by extended time expiration in the post of Surgeon-Colonel Beatson, 9th Bengal Cavalry, who will be succeeded by Surgeon-Major Shearer, 27th Punjab Infantry, late in medical charge of the 63rd Native Field Hospital.

THE ROYAL MEDICAL BENEVOLENT COLLEGE, EPSOM.—Founder's day was celebrated on Monday, July 25th. The Rev. T. N. Hart-Smith presided, and among those present were Dr. T. W. Shore, Sir Joseph Fayrer, Dr. Holman, Dr. Lumsden Propert, Dr. Baines, Mr. Kiallmark, Colonel Gordon Watson, Mr. H. E. Vardon, Mr. Clement Smiles, and Mr. A. Oldaker. In his address the headmaster, the Rev. T. N. Hart-Smith, called attention to the large number of scholarships connected with the college and referred to the favourable alterations recently made in the conditions under which they were awarded. Dr. Shore, Warden of St. Bartholomew's Hospital Medical School, bore testimony to the excellence of the education given at Epsom College.

Correspondence.

"Audi alteram partem."

THE RECTAL INJECTION OF THE SERUMS.

To the Editors of THE LANCET.

SIRS,—In the treatment of diphtheria I have successfully employed a method of sero-therapy which has, so far as I am aware, not yet been brought under the notice of the medical faculty in this country. In this borough, and I think in most places where anti-vaccination precepts are rampant, any method of procedure which to the uninitiated savours of what our opponents are pleased to term the "Jennerian ritual" is certain to meet with most unreasonable and bigoted opposition. This spirit of interference is habitually manifesting itself in a stubborn refusal on the part of parents to allow their children to be treated with anti-diphtheritic serum. I think, however, that it is in large measure the method of administration which attracts the attention and calls down the anathemas of these parents. I was, therefore, last year tempted to inject sera *per rectum* instead of hypodermically and with such gratifying results that I see no reason to revert to the ordinary method of administration. So far I have not had a sufficient number of cases under my care to enable me to adduce evidence of any real value for statistical purposes, but I consider it expedient at this early stage to direct the attention of colleagues to what appears to be a simple method of employing a most excellent remedy. Certain it is that no harm can accrue through administering antitoxin by the bowel if the diagnosis is established and if the ordinary rules as to posology and aseptic preservation of the serum are observed. I have not seen a single case of rash or other complication which could reasonably be attributed to the serum. Such complications are, I believe, almost invariably caused by the coinjection of adventitious organisms or their products and it is at least possible that many of these would fail to pass through the rectal mucous membrane. The serum itself, judging by results, appears to undergo rapid and complete absorption, so that I have observed the usual posological rules. A difficulty with which many provincial practitioners have to contend is to procure fresh serum expeditiously. It deteriorates rapidly if kept and the twenty-four hours' delay which perhaps ensues before it can be obtained fresh may determine a case. For this reason dried serum has commended itself, but I think most practitioners will agree with me that its viscidity when dissolved interferes with its hypodermic injection—that is, unless it be mixed with an inconveniently large volume of water. Moreover, it is by no means easy to ensure its sterility when mixing it. If, however, we administer it *per rectum* these two difficulties vanish and it becomes, *cæteris paribus*, the ideal serum for provincial practitioners.

Briefly, the advantages of rectal over hypodermic serotherepy appear to be as follows: (1) It can be employed in almost all cases without fear of prejudicial interference; (2) solid sera can be conveniently used; (3) it is expeditious and simple; and (4) the absorbed serum is purer. I have also administered anti-streptococcic serum per rectum with gratifying result in a case of scarlet fever. Reasoning by analogy the method appears to be deserving of trial, and should my expectation as to its general employment in the near future be verified we may possibly hear of some enterprising firm supplying solid sera in the form of suppositories. The adduction of experimental as well as clinical evidence as to the absorption of sera and, indeed, of lymph by mucous membranes would be pregnant with interest.

I have the honour to be, Sirs, yours faithfully,

J. E. O'CONNOR, M.B. R.U.I.,
Physician to the Lowestoft Isolation Hospital.

Lowestoft, July 21st, 1898.

"ONLY A PAUPER."

To the Editors of THE LANCET.

SIRS,—I notice that you have in THE LANCET for the second time cast a slur on what you term the Marylebone infirmary workhouse. There is no such place as the Marylebone

infirmary workhouse and your comments in THE LANCET of July 16th might give a false impression to many ignorant persons who would not distinguish the difference between a workhouse infirmary and an ordinary workhouse such as the Gray's Inn-road workhouse. The case reported in THE LANCET of June 25th occurred at the latter place, which is only a temporary workhouse and over three miles from the infirmary. The nurses here, 74 in number, are all fully trained as required by the Infirmary Committee and the committee of the Nightingale Fund, and they are, as acknowledged by many of the leading medical men in London and as shown by the important posts they get after their three years' training here, as well qualified as those trained at any hospital. I should be glad if you will be careful in future not to speak of the Marylebone workhouse as the Marylebone infirmary workhouse and should be grateful if you will come and inspect our wards, when you will see for yourselves that the "paupers," as you call them, have every care, comfort, and kindness that medical skill and good nursing can bestow upon them. In the meantime I beg to enclose a few papers which may give you a small idea of what is required of our nurses. I am, Sirs, yours faithfully,

JOHN R. LUNN,
Medical Superintendent.

St. Marylebone Infirmary, July 23rd, 1898.

*** We are sorry that the mistake should have occurred.—ED. L.

"THE DRAINAGE OF SWANAGE."

To the Editors of THE LANCET.

SIRS,—Allow me to supplement Dr. McCausland's admirable letter of July 19th[1] by the following short account of the deaths here during the three last completed years 1895-96-97. They number 107, which gives 16 per 1000 for the population. On analysis 43 were of those seventy years old and over, 25 of children one year old and under, 5 were the result of accident, 5 were cases of cancer, and 5 died from phthisis, leaving 24 deaths during three years in a population of over 2500 from all other causes—results for which any town may be thankful. Party quarrels and rival interests, I am sure you will admit, should not be allowed to intrude into these questions. The "sanitary defects pointed out by Dr. S. W. Wheaton in his report of 1897" *do not remain*, and this is the seriousness of the charge you have made. I am, Sirs, yours faithfully,

Swanage, July 25th, 1898. EDWARD CALTHROP.

"BONE-SETTERS AND THE EMPLOYERS' LIABILITY ACT."

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent, Mr. John Cranke, I beg to say that I have had considerable experience of cases under the Employers' Liability Act, having until recently held the office of consulting surgeon for such cases to several large unions representing in the aggregate about 100.000 men. Your correspondent's questions are entirely legal ones and as such can be better answered by a solicitor. My experience in cases under the Employers' Liability Act is that the question to be settled is mainly how long the man has been or is likely to continue to be disabled, and that the compensation is settled on that basis—assuming that the man is legally entitled to any compensation at all, and this latter question the practitioner is not called upon to decide. In estimating the recovery of a man the question is *not* when will it be possible for the man to work, but when will he be certainly able to do his usual work as well and with the same ease as before the accident, providing the nature of the injury permits of such recovery within a reasonable period; in other cases the question of the man's ability to do (and obtain) light work will arise.

Personally I have never heard the question raised in court as to how far a man's misjudgment in the selection of a medical adviser who may have retarded his recovery has any effect on the employer's liability. So far as I can judge, however, there is little or no doubt that the employer would be held responsible for the full compensation, including the further injury done by the medical adviser—bone-setter for instance—on the ground that the patient in calling in the medical adviser (bone-setter) acted in good faith and certainly would not have done so had the accident not occurred. Assuming that your correspondent means the "Workmen's Compensation Act, 1897," when he speaks of the "new Act," I certainly think that under that Act the compensation will be largely, if not entirely, settled on the same basis; but this again is a purely legal question. With regard to protection generally the General Medical Council is proverbially slow to act and in this particular case the bone-setter in question does not appear to have represented himself as a registered medical practitioner and I do not think that in the present state of the law he can be prosecuted. Worse luck!

I am, Sirs, yours faithfully,

Ilford, July 25th, 1898. MURTAUGH HOUGHTON.

[1] THE LANCET, July 23rd, 1898, p. 228.

THE TREATMENT OF GOUT BY PIPERIDINE.

To the Editors of THE LANCET.

SIRS,—I was much interested in the paper of Dr. Tunnicliffe and Dr. Rosenheim on Piperidine as a Uric Acid Solvent contained in THE LANCET of July 23rd and consider that the authors deserve every credit for their laborious and painstaking investigation. Undoubtedly the experiments described in the paper show that piperidine may be of use in cases of uric acid gravel and calculi as a solvent of uric acid on the distal side of the kidneys, and the experiments also show that the drug is in such respects superior to piperazine, but the value of the drug as a solvent of gouty deposits is, in my opinion, by no means proved. Dr. Tunnicliffe and Dr. Rosenheim state that the tartrate of piperidine may be given in doses of 15 grains three times a day. Now, if 15 grains of piperidine were introduced at once into the circulation of an adult man of average weight the percentage of the drug in the blood would be about 0·002, yet the only experiments conducted by the authors as to the solvent effect exerted by piperidine on sodium biurate are with 0·1 per cent. solutions, or with fifty times as much as could be introduced into the circulation by ordinary dosage. My experiments described in THE LANCET of June 11th, 1898, showed that piperazine and other drugs, when present in far larger proportions than could be introduced into the blood by medicinal administration, did not increase the solvent power of artificial blood serum for gouty deposits. The results of my experiments confirm those obtained by Sir William Roberts and by Dr. Levison of Copenhagen, and are also supported by my clinical experience. Dr. Tunnicliffe and Dr. Rosenheim state that "there seems little doubt that uric acid is normally present in blood." If they will refer to the comparatively recent results of von Jaksch, Klemperer, Sir Alfred Garrod, and myself they will learn that there is considerable doubt as to the normal presence of uric acid in the blood. Dr. Tunnicliffe and Dr. Rosenheim have certainly estimated something in bullocks' serum, but they do not mention whether they identified the body as uric acid by the murexide test.

I am, Sirs, yours faithfully,

ARTHUR P. LUFF, M.D. Lond.

Weymouth-street, W., July 26th, 1898.

THE HUXLEY LECTURE.

To the Editors of THE LANCET.

SIRS,—I shall feel very much obliged if you can kindly find a corner in THE LANCET for a statement of the fact that the Huxley Lecture which Professor Virchow is to deliver on Monday, Oct. 3rd, will be *in English*, as there seems to be so much doubt on the point, notwithstanding the very clear intimation which you gave in your issue of July 16th.

I am, Sirs, yours faithfully,

H. MONTAGUE MURRAY,
July 23rd, 1898. Dean of Charing-cross Hospital Medical School.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET

SIRS,—With some reluctance I venture to trespass once again upon your space. The above is, however, a subject which deserves and is now receiving a large amount of

our attention. Your able leading article draws attention to a very important point—that the newly qualified man has been only familiar with men at the head of their profession who enjoy considerable incomes and is apt unthinkingly to apply similar standards of luxury to members of the profession generally. Now there is surely a great difference between the newly qualified and the long qualified man; the former has nearly everything to learn so far as the actual details of practice go; the latter may be an invaluable help to his principal. Most medical men are in such a position that they cannot possibly afford to keep an elderly assistant and so have to do all the important work themselves.

"Another G. P." sympathises with us who get so small a return for our labour. While fully agreeing with most of his letter, I fail to see that I was squeezed by my late principal who paid me £80 in-door. I was satisfied, although I had previously held some important hospital appointments, and I consider that from £80 to £100 in-doors, gradually increasing slightly, is as much as any assistant is worth to a country practitioner.

"Practitioner Too" and also "Another G.P." are anxious to hear some of the details as to clubs, parish work, &c. Both my own practice and also that of my late principal have been practically free from clubs; the few members that either of us had averaged 5*s.* per annum for attendance on the member himself. The parish work was practically *nil* and the remuneration received for it was consequently more than adequate. A fee of 2*s.* 6*d.* was and is the lowest fee charged either in the surgery or for a visit save only in a few exceptional cases. The general fees were charged according to the tariff of various branches of the British Medical Association, but it is one thing to charge and another to be paid. Many of my patients live six miles away, some of them twelve. It is a very scattered district and I am the nearest medical man. The population could not possibly support another. How do your readers expect a labourer earning 10*s.* per week and his food to pay me adequate fees for a twenty-mile journey? This point always suggests to me the possibility of State payment in such cases, especially for attending infectious diseases where our chief aim is to protect the public. We must remember that the medical officer of health is not expected to attend the patient, and is, therefore, not always in a position to say when infection is over. My own expenses could be considerably cut down in the matter of horseflesh by refusing to attend these impecunious long-distance cases, but what is to become of them? Another point is, I consider it high time that the members of the profession awoke in a mass from their lethargy with regard to bad debts in cases where there really is money to pay.

I have explained that this practice is almost devoid of clubs and ridiculously small surgery fees, though I question very much whether the club doctor does not get more adequate return in the long run than we who have to whistle for our money. I will give one instance of where the long distances make the life one of slavery. I have just received the sum of £1 4*s.* for vaccinations performed as public vaccinator; the fees were sufficient for the work performed if it had been done at home, but I was allowed nothing for travelling though I was expected to drive 72 miles to attend the various stations. Your correspondents appear to think my figures extreme and I will allow that there are a few special circumstances, unconnected with myself and which cannot be disclosed, which certainly make my income a little less than it otherwise would be. To my mind bad debts are quite as much to blame as small fees, and if things go on as they are we shall almost certainly have to consider the necessity of either some form of State aid in scattered districts, or compulsory collection of debts, or a wholesale club system at reasonable fees for all working men and their wives and families. If assistants will only consider the matter fairly I feel sure that they will see no necessity to complain of being squeezed by their principals. It is the profession which is being squeezed by the public, and the assistants are in many cases the only ones who are unable to feel the pressure, for they are housed and fed and should surely be able to save something out of £80 or £100. The numerous societies to which we subscribe should be sufficient to safeguard our interests and we must look to them to do it.

One other point: how much would the qualified assistants who are now sneering at a remuneration of £100 in-door be willing to accept from hospital authorities for a house surgeoncy? We have heard very little of the gratuitous or almost gratuitous services rendered in these institutions, but surely it is here that the battle should commence. Here the funds come from the public and it is indeed hard that the public should be let off and the hard-worked practitioner expected to pay large sums for similar services and at the same time bear all responsibility. I have in my mind at the present moment a case in which the principal had to pay nearly £100 for a mistake made by a qualified assistant. If it were not for the long distances I should be satisfied with my income, but it is just these awful journeys which cost the time and money and make up the chief difference between the town and country practitioner. An actual income of £400 represents a far larger amount of bookings, but the latter are of no use without the cash.

I am, Sirs, yours faithfully,

July 24th, 1898. PRACTITIONER.

To the Editors of THE LANCET.

SIRS,—Just now we are hearing a good deal in the columns of THE LANCET and elsewhere concerning the alleged dearth of qualified assistants, the alleged multiplication of poor principals who cannot afford to pay a decent salary, and the alleged dead-lock caused by the recent *pronunciamiento* of the General Medical Council, which numbers the unqualified assistant among the things that were. That the unqualified assistant was an unqualified nuisance, will, I think, be denied by few, save those whose judgment is biased by self-interest. That well-educated and self-respecting young gentlemen should decline to undertake arduous duties for salaries less than the wages of an upper servant is not surprising. That the acceptance of contemptible fees for responsible professional services is degrading to the individual and derogatory to the dignity of a learned profession is abundantly evident. That side by side with the alleged dearth of assistants there is an undoubted plethora of practitioners is shown by the yearly growth of the Register.

If these things are so the question arises, Is there any practical remedy for this sufficiently grave state of matters? I believe that there is such a remedy, though at first sight it may appear an anomalous one. It is this. Raise the preliminary examination at once to a good university standard. Let there be no delay and no half-measures. Weed out boldly. By so doing a large proportion of the unfit will be debarred at the very threshold from entering a profession which they are not fitted to adorn. Lessen the crowd of hungry aspirants who now greedily compete for every appointment, be it ever so paltry, and undersell each other like petty tradesfolk for sixpences and shillings, so that the average practitioner may once more have leave to live and to respect himself. When the principal is decently remunerated the assistant will be decently paid and things will right themselves all round. The public, too, will be the gainer, for the whole tone of the profession will be raised, and it will get a better article for its money, though not perhaps quite such a ruinously cheap one. It is vain to agitate for a legally-recognised minimum fee unless the plea be backed by large and solid voting-power, such as the profession has never had nor ever will have at its command. It is also inexpedient, for such a fee would only tend to pauperise further those who can afford to pay something but not much, so that the remedy might prove worse than the disease. At present an easy preliminary examination opens the door to a long curriculum and hard professional examinations. These, in their turn, open the door to a fierce struggle for existence in an overcrowded arena. Thus the socially and intellectually unfit crowd in—to their own discomfiture at the examination tables or to that of their *confrères* in after life.

The General Medical Council has eliminated the unqualified assistant. Let it follow up what it has well begun by eliminating the unqualified qualified man who enters the profession unhampered by the instincts and culture of a gentleman; who brings his calling into contempt and takes the bread from the mouths of his professional brethren by giving advice and medicine for a few pence; who cannot speak his mother-tongue correctly or indite a grammatical letter; and who munificently rewards his duly qualified and registered assistant with a salary about equal to that of a bricklayer's labourer.—I am, Sirs, yours faithfully,

July 23rd, 1898. M.D. EDIN.

A POINT UNDER THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

To the Editors of THE LANCET.

SIRS,—I have recently been attending several members of a family suffering from an infectious disease which I notified to the public health authorities in due course. On their recovery the rooms in which the patients had been were disinfected by burning some chemical substance the nature of which I am not acquainted with, under the supervision of the afore-mentioned public health authorities. At the termination of this a paper was left with my patients for me to sign—a printed document in legal phraseology—stating that the process of disinfection had been carried out to my satisfaction and that all articles in the rooms had been thoroughly and efficiently cleansed and disinfected. It was intimated at the same time by the father of the patients that the authorities had informed him that if his medical practitioner signed this it would save further trouble and expense of stripping walls, papering, perhaps painting, &c., but failing that the above would very likely have to be done, though in their opinion it was not necessary. You observe there is no communication between myself and the authorities, it is all conveyed to me by more or less irresponsible but interested third parties and I have to take their word for what has been done; this document to be signed within twenty-four hours. I endeavoured to keep out of the affair by saying that it was for public health people to do as they thought best, but I was so worried by the family that I eventually signed the required form.

It is needless for me to enter into the very unpleasant position this kind of thing places a general practitioner with his patients. I know it is useless discussing this particular case any further. I have acted as I believe for the best and must take my chance of anything cropping up in the future, but the question is, how should one act another time? It appears to me that the responsibilities which were intended to rest with the administration of the Public Health Act are thus thrown upon the practitioner in attendance, rendering him liable to an action at law if such were at any time contemplated by an aggrieved patient. I will not further encroach upon your valuable time by discussing other matters connected with this affair of less importance which naturally present themselves.—I am, Sirs, yours faithfully,

July 25th, 1898. PUBLIC HEALTH.

*** We think our correspondent's scruples about attaching his signature very reasonable.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Bombay City: The Need for Water-meters, the Rise in the Subsoil Water, and the General Health; Plague in the Presidency.—Calcutta: The System of Licensed Family Hospitals for Plague; Extraordinary Regulations for the Lady Nurses.

IT has been asserted for many years that the subsoil water of Bombay was rising and that the soil was becoming water-logged. This has been attributed to the enormous waste of water. The city of Bombay is well supplied with water from several sources, the total quantity brought into the city being at the rate of between 40 and 50 gallons per head per day. Judging from the supplies to other Indian cities probably 10 gallons would be amply sufficient for all domestic purposes. There are numerous public taps continually left running as well as other sources of waste. This reckless waste is a source of considerable loss to the municipal revenue and the reduction of pressure in the mains is so reduced that the supply of water in case of fire is seriously interfered with. Too much water is in reality brought in by the mains, a large portion of which soaks into the soil and is not carried off by the sewers and surface pipes. The municipal commissioner in a recent report most powerfully shows the necessity of adopting the meter system. The proposal has been drawn up so as to provide liberally for the wants of the people. Considering this question so far as it affects the public health this important observation must be made. Notwithstanding that about 30 inches of rain have already fallen during the present monsoon, the reckless waste of water for many years, and the water-logged condition of the soil, the death-rate from diarrhœa and dysentery is 50 per cent. below the average, fevers are lower than the average of past years, and diseases of the respiratory organs show no increase. It is evident, therefore, that the saturation of the soil by all these causes is not immediately productive of disease, although doubtless, from the experience of drainage improvements in English towns, it has some injurious effect on the total yearly mortality. The deaths for the past week have been at the rate of 26·13 per 1000 per annum.

With regard to plague, it is unsatisfactory to find that while the returns are not so high as last week they are higher than the minimum attained in June. The quarter of Mandvie may almost be looked upon as the centre from which the disease spreads. Nine deaths were registered there during the past week. Plague is still existent in the following districts: Broach, Surat, Thana, Satara, Koluba, Belgaum, Dharwar, and Kathiawar.

A very diplomatic compromise between what ought to be done and the wishes and prejudices of the natives has been effected in Calcutta by the establishment of licensed family hospitals for plague cases. The sanitary measures hitherto adopted elsewhere are not adapted to the Indian people and consequently the regulations about plague have been evaded in every possible way. The establishment of this system, therefore, has gained the confidence of the people. Besides the public hospitals and the ward hospitals there are numerous private hospitals, so that all the communities are now well provided for. In addition to this houses possessing anything like suitable accommodation for the isolation of a case of plague are allowed to have one or more rooms set apart for the purpose. By these concessions every case of plague ought to come under observation. The plague scare has greatly subsided and inoculation is coming slowly into favour among all classes. It is very satisfactory to note that the number of cases of plague still continues very small and that it is daily decreasing.

The regulations issued in Calcutta to govern the conduct of the English lady nurses while off duty are simply monstrous. Girls at a school could hardly have their liberty more restricted. Everything has to be referred to the lady doctor who is acting as matron to the establishment. Judged by the rules she must be severely exacting. "Sisters going out driving are required to let the lady doctor know their destination and their escort (if any); and she is given authority to modify the arrangements made." "Visitors to the sisters must send in their card to the lady doctor." The sisters are only permitted to be out for one evening during a week. In case of sickness the sister is only allowed to have the further advice of one of the senior (!) medical practitioners of Calcutta. "Some public duty may be required from such (personal) servant at the discretion of the lady doctor." Even to afternoon tea no visitors may be invited except with the consent of the lady doctor. "*Ladies* may occasionally be invited to other meals (with the consent of the lady doctor)." These rules are issued, printed, and are signed by R. T. Greer, acting chairman. It will be remembered that the sisters were appointed by the Secretary of State for India and came out from England with the title of lady nurses and that they rank as lady superintendents. They were required to furnish the highest credentials of service and capacity. They are, in fact, an exceptionally well-trained staff. Under these circumstances the indignity offered them by these childish regulations is most offensive. Their agreement does not refer to any rules of conduct—only to the lodging and other accommodation to be provided for them. It is evident, therefore, the authorities have exceeded their powers and have placed the English sisters in a position which must lower the public respect due to them as highly trained nurses. The position of the lady doctor under these circumstances must be a most unenviable one.

July 9th.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT.)

THE general health of the troops up here is excellent although several scattered cases of enteric fever and dysentery have occurred. The men are, of course, rather "fine-drawn," but only to the extent one would expect to

find them after a prolonged stay in the frightful heat of the Soudan in the summer months. The general surroundings of the camp as regards sanitary requirements are good; the water-supply is carefully looked after, all used being filtered, and the supply of Pasteur filters is ample, although it is to be regretted that they were not brought into use before. The temperature runs up to anything in the sun, but in the mud huts and tents the average is about 90° F. The nights are fairly cool and pleasant and were it not for the plague of flies which pervade the huts and make writing or reading almost impossible there would be little to complain of. The men get fresh rations of very fair meat and their diet is supplemented by the issue of bacon and jam twice a week. The scarcity of green stuff and vegetables is, of course, sorely felt, but under the circumstances the food is ample, and there is little cause for grumbling even by that prince of grumblers "Thomas Atkins."

We are sorry to hear that after six months' hard work, able organisation, and devotion to the health and comfort of the numerous sick and wounded, our present principal medical officer, Lieutenant-Colonel McNamara, is to be superseded by an officer of higher rank from home, who will come out and find everything in first-rate order (thanks to his predecessor's unremitting attention). The medical arrangements for the advance are nearly complete and there will be no lack of medical officers when the fighting begins. The hooded stretchers are on their way, if not already here, and the Royal Engineers have been turning out a supplementary supply of splints suitable for field work; in fact, field, communication and base hospitals are excellently equipped. Two sets of x rays are on the way out, but their utility in field work remains to be seen, and I cannot fancy they will be of that amount of service which is anticipated by honourable and gallant Members of the House. However, they will be on hand and there are two medical officers, who have been specially trained, available to work them. The hospitals here are to be emptied by the end of the month, and the men who are not likely to stand the wear and tear of the advance will be sent down. The disposition of the medical staff will be: medical officers allotted to each regiment and to field hospitals, hospitals on the lines of communication, and the base hospital at Cairo.

Darmali, Soudan, July 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Distribution of the Hospital Sunday and Saturday Fund.

THE following amounts have been allotted from the Hospital Sunday and Saturday Fund:—£2640 to the Liverpool Royal Infirmary; £1800 to the Royal Southern Hospital; £1560 to the Northern Hospital; and £840 to the Stanley Hospital. Other charities also benefit by various smaller amounts out of a total of £12,000 which has been distributed. An effort was made at the meeting of the Distribution Committee to alter the date of the Sunday collection from the second Sunday in January to the second Sunday in March owing to the numerous complaints of the hardships of contributing so soon after Christmas. The secretaries had invited opinions as to the desirability of altering the date by issuing circulars to 292 places of worship contributing to the Fund. 57, representing a contribution of £2174 1*s.* 10*d.*, were in favour of the existing fixture; 114, representing a contribution of £1727 10*s.* 9*d.*, voted for a change to the month of March; 79, representing a contribution of £1799 6*s.* 9*d.*, sent no reply; whilst others were indecisive. The proposed change was opposed by Mr. F. W. Lowndes (to whose efforts were largely due the early introduction of Hospital Sunday in Liverpool), who urged that a change of date would decrease the total of collections. The feeling of the meeting was in favour of retaining the January fixture, with the result of the rejection of the amendment by 10 to 5 votes.

University College, Liverpool: Fellowships.

The Holt Fellowships in Physiology and Pathology established by the late Mr. George Holt in 1886 for a period of ten years and renewed for a further period by Mrs. and Miss Holt have been awarded to the following gentlemen respectively: Mr. A. Hope Simpson, provisionally upon his attaining full qualifications within a period of three months; and Mr. K. Nelson. The Robert Gee Fellowship in Anatomy of the value of £100 has been awarded to Mr. F. Lovegrove.

Hospital for Women, Shaw-street.

Dr. Murray Cairns has been appointed to the new post of stipendiary medical officer for a term of six months; the appointment carries with it an honorarium of £50.

Donation to the Chester Infirmary.

Mrs. Auster, of Edgbaston, Birmingham, has given a donation of £1000 to the Chester Infirmary for the endowment of a bed to be called the "Mr. and Mrs. John Churton Memorial Bed."

The Sanitary Condition of Wallasey, &c.

The annual report of Mr. Francis Vacher prepared for the County Council of Cheshire states that the birth-rate for the county, exclusive of Chester, Birkenhead, and Stockport, reaches 27·8 per 1000 living. There were 9810 deaths registered during the year 1897, giving an excess of births over deaths of 6432, the death-rate varying from 25·2 per 1000 at Neston and Parkgate to 11·3 per 1000 at Bowden and 8 per 1000 at Alsager, the average being 16·8 per 1000, against 17·4 per 1000 for the whole of England and Wales. Wallasey, near Liverpool, is spoken of with approbation as regards the percentage of successful vaccinations. On the other hand, typhoid fever was exceptionally prevalent there in 1897. In a house where a fatal case of typhoid fever occurred the roof of a very offensive privy was formed by the floor of a sleeping apartment. In another house visited by typhoid fever the soil-pipe was inside the house, the flushing-pipe of the water-closet was connected with the house system and the sink waste-pipe was connected to the drains. In a cottage in Wood-lane, Wallasey, it was found that a mother, four sons, of from seventeen to twenty-three years of age, and a daughter aged fourteen years, were sleeping in the same apartment. Some parts of Wallasey clearly stand in need of the vigilant attention of the officials of its health department.

July 26th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medico-Psychological Association.

THE fifty-seventh annual meeting of the Medico-Psychological Association of Great Britain and Ireland was opened in Edinburgh on July 21st. After the transaction of routine business the retiring President, Dr. T. W. McDowall, of the Northumberland County Asylum at Morpeth, introduced the President-elect, Dr. A. R. Urquhart, of James Murray's Royal Asylum, Perth, who in the preliminary portion of his presidential address touched on the improvements which had taken place in the treatment of insanity, illustrating his remarks by examples drawn from the history of Murray's Asylum. He then said that three Bills before the present Parliament were of special interest to the members of the association—namely, the English Lunacy Bill, the Habitual Drunkards Bill, and the Irish Local Government Bill. With respect to the first he regretted that it contained no proposal for increasing the number of the Commissioners in Lunacy, and he expressed a fear that its policy of legal restraints constituted a danger, for if the treatment of lunacy was governed by a department of the State the effect would be to fetter originality by the red-tape of bureaucratic control and to trammel the advance of scientific opinion by the deadweight of that officialism which is the besetting sin of asylum life. He congratulated his colleagues in Ireland on their opposition to the proposal to transfer the care of the insane to the Local Government Board and on their suggestions for the more efficient medical service of the Irish asylums. He particularly objected to the proposals in the Lunacy Bill to set apart the various wards of an asylum for certain specific purposes and to the limitation of the uses of succursal villas. With regard to the Habitual Drunkards Bill he thought that it ought to provide exceptional protection for individuals so handicapped in life's race and that the courts of law should be empowered to sequestrate any man who has so lost control of himself as to be a danger to himself and others by reason of his indulgence in intoxicants.

University of Glasgow.

The summer graduation ceremony was held on July 21st. Sir William Gairdner, K.C.B., presided and in the name of the Senate conferred the degrees on the various graduates, the great majority of whom belonged to the Faculty of Medicine. Thirteen gentlemen received the degree of M.D., Mr. J. W. Findlay, M.B., C.M., gaining honours for his thesis on the Choroid Plexus of the Lateral Ventricles: their Anatomy, Functions, and Pathology in Relation especially to Insanity. Mr. R. Gordon Bell, M.B., C.M., and Mr. J. D. O. Wilson, M.B., C.M., were commended for their graduation theses. Nine gentlemen graduated M.B. and C.M. under the old regulations and fifty-four graduates under the new regulations were "capped" M.B. and Ch.B. Amongst these Mr. William K. Hutton, M.A., Mr. Robert Fullarton, M.A., and Mr. William Webster were awarded "Honours," the first-named also gaining the Brunton Memorial Prize as the most distinguished graduate of the year. There were nine lady graduates. The customary address was delivered by Professor Stockman, who expressed in graceful terms his congratulations to the newly made graduates and gave them some sound advice in reference to their professional bearing and conduct. Passing from these appropriate though possibly somewhat trite topics Professor Stockman proceeded to attack in very energetic terms the conditions and circumstances attached to the chair which he occupies in the University. He found himself, he said, without a single scientific instrument either for teaching or research purposes, without any laboratory, and without any hospital wards where he could acquire experience in the actions of medicines, and where clinical instruction could be given to the students who were dependent on him for such instruction. If the present state of matters is to continue Professor Stockman pronounced that his teaching must necessarily become obsolete and he himself an incubus upon the University. These are certainly somewhat startling statements and have excited much comment both in professional and lay circles. As far as is known it is the first complaint that Professor Stockman has made of the equipment of his chair and it is not therefore surprising to find that the course he has chosen to pursue is sharply called in question. A public proclamation of inefficiency will scarcely be grateful to the University authorities nor will it advance the reputation of Glasgow as a medical centre, whilst the selection for the reception of such a complaint of an audience the vast majority of whom were taught by the former occupant of the chair may be criticised on the score of taste, other matters apart. However, there will be a general wish that the outcome will be an improvement in the laboratory and practical equipment of Professor Stockman's chair.

University of St. Andrews.

The following appointments have been made by the University Court: Alexander Mitchell Stalker, M.D. Edin., physician to the Royal Infirmary, Dundee, to be Professor of Medicine; David MacEwan, M.D. Edin., surgeon to the same infirmary, to be Professor of Surgery; and Charles Templeman, M.D. Edin., to be Lecturer on Forensic Medicine and Public Health in University College, Dundee; and David Fraser Harris, B.Sc. Lond., M.B. Glasg., F.R.S.Edin., to be Lecturer on Physiology at St. Andrews.

The Workmen's Compensation Act: Appointment of Medical Referees.

The Secretary for Scotland has appointed the following gentlemen as medical referees for Lanarkshire under the Workmen's Compensation Act, 1897: Dr. Hector Cameron, 200, Bath-street, Glasgow; Dr. T. K. Dalziel, 196, Bath-street, Glasgow; Dr. G. T. Beatson, 7, Woodside-crescent, Glasgow; Dr. Duncan Macartney, 18, Newton-place, Glasgow; Dr. James C. Renton, 1, Woodside-terrace, Glasgow; Mr. H. E. Clark, 24, India-street, Glasgow; Dr. David Newman, 18, Woodside-place, Glasgow; Dr. W. J. Fleming, 3, Woodside-terrace, Glasgow; Dr. James Barras, Westbourne, Bellahouston, Govan; and Dr. Hugh Arthur, Fruitfield, Airdrie. These gentlemen act according to a rotation to be fixed by the sheriff, which will in all probability be according to the above order.

The Sheriff-Clerk of Paisley has received intimation from Sheriff Sir John Cheyne that the Secretary of State for Scotland has appointed the following gentlemen as medical referees under the Workmen's Compensation Act, 1897:—Dr. Donald Fraser and Dr. Thomas Graham for the burgh of Paisley; Dr. James Whiteford and Dr. Thomas Philip for the burgh of Greenock; Mr. R. H. Parrie, 72, Queen's-drive, Glasgow, and Dr. A. E. Maylard, 10, Blythswood-square, Glasgow, for the county of Renfrew outwith the burghs of Paisley and Greenock; Dr. Robert Allan, Ardrossan, for Arran, in the county of Bute; and Dr. J. N. Marshall for the county of Bute, excepting Arran.

Sudden Death of the Medical Officer of Montrose.

On Friday, July 22nd, there died suddenly at Montrose Mr. Herbert William Greatbatch, M.B., C.M. Edin., who was appointed medical officer of the borough of Montrose a few months ago. After graduating he was for two years a junior medical officer at Sunnyside Asylum, near Montrose, and thereafter he was assistant to Sir J. Batty Tuke of Saughton Hall Asylum, Edinburgh. After two years' practice on his own account in Staffordshire, during which period he was deputy medical officer of health in the borough of Stoke-upon-Trent, he returned to Montrose in 1895 and entered into partnership with Dr. Andrew Key, the oldest medical man in the town.

Aberdeen Sick Children's Hospital Bazaar.

H.R.H. Princess Henry of Battenberg has agreed to open the bazaar to be held in Aberdeen on Oct. 28th next in aid of the Royal Aberdeen Hospital for Sick Children. The number of patients in the wards on July 21st was 80 and at Eidda Home 11; total 91.

July 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health Congress in Dublin.

HIS EXCELLENCY THE LORD LIEUTENANT has consented to formally open the Health Exhibition in connexion with the Congress in the Royal University Buildings on Aug. 18th at 3 o'clock. A meeting of the Executive Committee of the Congress was held on July 20th at the offices of the Public Health Department, Dr. Thomas W. Grimshaw, C.B., Registrar-General, occupying the chair. A meeting of the committee of the municipal and Parliamentary section in connexion with the above was also held on the same day, under the chairmanship of Alderman the Right Hon. J. M. Meade, P.C., LL.D., when the details of the programme as affecting the section, together with the subjects for discussion, the titles of papers proposed to be read, &c., were carefully considered. Sir William Stokes has accepted the office of Vice-President of the section of Preventive Medicine and Vital Statistics.

The Proposed Division of the Richmond Asylum District.

At the last meeting of the governors of the Richmond Asylum, held on July 14th, an important letter was read from the Inspectors of Lunatics in Ireland with regard to the probable number of patients who will require accommodation in the near future and the advisability of dividing the district. The communication pointed out that the number of patients in the asylum amounted to 1945. The number of the insane in workhouses in the city and county of Dublin, the county of Wicklow, the county of Louth, and the town of Drogheda on Dec. 31st last was 644; the number wandering abroad, according to the census of 1891, was 312, making a total of 2901. The Inspectors stated that under those circumstances they had laid before the Government the question of dividing the Richmond Asylum District.

The Royal Victoria Hospital, Belfast.

A meeting of the subscribers of this hospital was held in Belfast on July 20th to consider the proposed charter which has already been approved by the Board of Management of the Royal Hospital.[1] On the motion of the chairman (the Right Hon. W. J. Pirrie, High Sheriff of Antrim), seconded by Mr. W. H. Dixon, chairman of the Board of Management of the Royal Hospital, the amended charter as submitted was adopted. Special votes of thanks were passed to the corporation of Belfast for so kindly granting a site for the new hospital and for obtaining the sanction of Parliament. The site given by the corporation is worth from £30,000 to £40,000 and it enables the committee to devote the whole of the £100,000 to the cost of erection. Thanks were also given to the Right Hon. W. J.

[1] THE LANCET, July 16th, 1898, p. 177.

and Mrs. Pirrie for their exertions on behalf of the hospital scheme. It was announced that there was a sum of £64,000 in the bank to the credit of the fund and there was also a considerable amount promised towards an endowment scheme.

Typhoid Fever and Shellfish.

At a meeting of the Public Health Committee of the Belfast Corporation, held on July 21st, Dr. Bigger, physician to the Fever Hospital, called attention to the fact that many cases of typhoid fever had been traced to the eating of shellfish gathered on the odoriferous banks of Belfast Lough, which are saturated with sewage matter, and it was decided to call public attention to this circumstance in order that people may be apprised of the danger of eating shellfish taken from such an unsavoury locality. It is a great misfortune that both sides of Belfast Lough for a considerable distance from the city, owing to the deposit of sewage matter, &c., in the seaweed at low tide, emit the most horrible stench, especially in the present unusually hot and dry weather.

The Londonderry Lunatic Asylum.

It would seem that the Grand Jury of the county of Londonderry has passed a resolution by 19 to 14 urging that, pending the coming into office of the county council, the Board of Control be requested to restrain the governors of the lunatic asylum from taking further action towards the proposed building scheme, as reported in THE LANCET.[2] Sir Thomas Lea, Bart., M.P., is to ask a question in the House of Commons in reference to this undoubted difference of opinion in county Derry as to whether a moribund body has the right to incur such an expenditure of money so shortly before the transfer of its powers to the county councils.

The Workmen's Compensation Act.

Dr. J. Walton Browne and Dr. T. Sinclair Kirk have been appointed medical referees under the new Workmen's Compensatton Act.

July 26th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Notification of Infectious Diseases.

AT the meeting of the Academy of Medicine held on July 19th M. Monod said that the notification of infectious diseases was an excellent measure and that the notifications had risen from 23,414 in 1896 to 26,000 in 1897. The authorities had done all in their power to obtain notification by medical men; prosecutions were only undertaken when failure to notify involved danger to the public—as, for instance, during an epidemic. M. Ferrand, who was not an advocate of the system, having compared it to the declaration of births and having expressed the opinion that the onus ought to be laid on the family, M. Monod replied that this change would be difficult to make, for, apart from medical men and some exceptionally well-informed persons, people generally believed that there was some objection to their notifying cases, and it would be remembered that certain parochial authorities had acted as if they shared this opinion. However, the Public Health Bill which was being prepared would extend the duty of notification to heads of families, hotel-keepers, and persons in attendance on the patient.

Pathology of Caseous Pneumonia.

At the same meeting of the Academy of Medicine M. Grancher read for M. Auclair a paper in which he sought to show as the result of numerous experiments that caseous pneumonia is due exclusively to toxins elaborated by Koch's bacillus. All authors have regarded it as a mixed infection due to streptococci and pneumococci. If extracts of cultures of the tubercle bacillus made with ether or chloroform are injected into the trachea of guinea-pigs the result will be the production of caseous pneumonia with giant cells, fibrinous exudation, sclerosis, &c. Cultivation experiments made with the caseous foci thus obtained never yield cultures. Nothing can be more decisive as to the connexion of caseous pneumonia and tuberculosis.

Regeneration of the Mucous Membranes.

At the same meeting of the Academy of Medicine M. Cornil stated that he had recently been studying the repair of mucous membranes and that he had ascertained several new facts by experiments made in dogs on the urinary bladder, the gall-bladder, the uterine mucous membrane, and the ureter. The regeneration of the uterine mucous membrane is accomplished by means of the glands in a peculiar way. The method of investigation consisted in slitting up the ureter or the uterine horn longitudinally and killing the animal some hours or days afterwards. He found in the course of his experiments that mucous membrane, that of the ureter for instance, might be grafted directly on the omentum. The facts brought to light by M. Cornil are of great importance from the point of view of general anatomy.

The Artichoke as a Culture Medium in Micro-biology.

Bacterial cultures have been made on almost all vegetables, but the potato and the carrot are the principal ones which are in daily use in bacteriology. M. Roger has, however, reported to the Society of Biology, at the meeting held on July 16th, that in his opinion the artichoke possesses several advantageous qualities in this respect. Nothing is more simple than to prepare it for the purpose. After having stripped off the scales the thick part is cut up into little cubes, care being taken to preserve the fibres *(foin)*. The pieces are placed in tubes plugged with damp wadding, the fibres being uppermost, so that the culture medium is represented by a fleshy mass surmounted by a sort of tuft. When the wadding is inserted the whole is heated in an oven to 115° C. for a quarter of an hour. In making the inoculation the germs must be deposited at the point of insertion of the flowers.

Influence of Tuberculin on Cultures of Koch's Bacillus.

At the same meeting of the Society of Biology M. Carnot mentioned that he had ascertained that if a small quantity of liquid derived from a previous culture of Koch's bacillus is added to the ordinary culture media before they are inoculated with tuberculous material the effect is to hasten the growth considerably. In practice the same result is obtained by adding some drops of tuberculin to the culture media. If, on the contrary, the quantity of tuberculin is increased—if, for instance thirty drops are added to a culture instead of five or six—the culture either does not undergo development or else its development soon stops.

Rabies in Dogs.

The general report presented by Professor Proust to the Council of Hygiene on the cases of rabies observed in 1897 in the department of the Seine elicited from that learned assembly numerous interesting remarks on rabies and its treatment. Finally, the council repeated the two resolutions which it passes every year: 1. That the council approves of the regulation of May 30th, 1892, relative to stray dogs and recommends that this regulation should be strictly enforced throughout the jurisdiction of the prefect of police. 2. That the council urges the authorities to prosecute the owners of animals which have shown themselves to be vicious and with regard to which the police have presented reports.

July 25th.

MR. D. M. FORBES, who for the last thirty years has held the office of medical superintendent of the Infirmary of St. Leonard's, Shoreditch, was on July 19th entertained to luncheon at the Holborn Restaurant and presented with a testimonial on the occasion of his retiring from that position. Mr. R. G. Alabaster occupied the chair and the company included many of Mr. Forbes's personal friends, among the number being the Ven. Archdeacon Sinclair and a few medical men. Mr. Forbes, a Scotsman by birth, has for many years been a prominent member of the Royal Scottish Corporation and the Royal Caledonian Asylum, and a generous contributor to the funds of these charitable institutions as well as a warm supporter of other Scottish societies in London. He did excellent work with regard to the better treatment and nursing of the sick in the Poor-law establishments of this country and the passing of the White Lead Factories Act of 1891 which has done much to ameliorate the condition of the workers in that industry. The testimonial took the form of a beautifully illuminated address on vellum, together with a purse containing over 600 guineas.

[2] THE LANCET, July 23rd, 1898, p. 234.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

THE sixty-sixth annual meeting of the British Medical Association was opened at Edinburgh on Tuesday, July 26th, under the presidency of Sir THOMAS GRAINGER STEWART, M.D., LL.D., F.R.S. Edin., Professor of Medicine in the University of Edinburgh and Physician-in-Ordinary to Her Majesty the Queen in Scotland.

The Association first met in Edinburgh in 1858, under the presidency of the late Dr. William Pulteney Allison; its next visit was in 1875, when the late Sir Robert Christison was President. It is therefore twenty-three years since the Association last met in Edinburgh and the selection of the capital of North Britain for a meeting was to make it a foregone conclusion that the gathering would be a successful one. For not only is Edinburgh a city which is beautiful by situation and architecture, but she is endeared to every medical man by the splendid traditions of her medical school and the memories of Simpson, Syme, and countless other masters of our science whom we leave unnamed because no attempt can here be made to write a roll call of Edinburgh's medical heroes. It is no wonder, therefore, that an unusual number of members are attending and that the contingent of foreign guests should be particularly large.

The arrangements for the reception of members and guests during the week have been excellent. The reception room has been taxed to its utmost capacity to accommodate the large number of members who have assembled each morning to procure the daily journal and to seek information on various matters. This was especially the case on Tuesday morning, when very many members were registering their arrival, and the crowded state of the room must have caused the officials not a little anxiety in their endeavours to satisfy the needs of the large numbers patiently waiting for attention. But for this successful organisation great thanks are due to the general secretaries of the local committees, Dr. R. W. Philip and Dr. J. Shaw M'Laren, as well as to the secretaries of each committee. The hardest work would naturally fall upon the secretary of the Entertainments Committee and the duties of the post were admirably discharged by Dr. A. Stodart-Walker.

A most convenient feature of this year's gathering was the location of the sections in the University New Buildings, which afforded ample shelter for all sixteen sections under one roof—an accommodation which the Association is not often able to avail itself of or many places to offer. The great advantage thus presented to those desirous of attending more than one section the same morning does not need any emphasising. As a rule at congresses much valuable time is spent and much temper is lost in getting about from section to section, but all this has been avoided at the Edinburgh meeting of the British Medical Association.

An opening service was held in St. Giles's Cathedral at 11 A.M. on Tuesday for the members of the Association. Dr. Whyte, Moderator of the Free Church General Assembly, delivered the address and founded his discourse on the text, "The greatest of these is charity," exemplifying it by tracing the life and work of Sir Thomas Browne, the author of the "Religio Medici," and declaring that if ever any man was a truly Catholic Christian it was he. The collection was, as usual, for the Royal Medical Benevolent College and the British Medical Benevolent Fund.

The Drill Hall in Forrest-road, the entrance to which is almost exactly opposite the reception-room, proved to afford quite adequate space for the exhibition of drugs, foods, and sanitary and surgical appliances which is usually associated with the annual meeting of the Association. Although the exhibition was announced to be opened on Tuesday there was very little sign of the arrangements being completed on the morning of that day. By the afternoon, however, the scene had considerably changed and had rapidly assumed the appearance of a really attractive and artistic show. The arrangements were well planned and while the allotted spaces were individually sufficient from the point of view of the exhibitor, there was yet plenty of room for the visitors to move about freely. Indeed, the thoroughfares dividing the lines of stalls made the visit of inspection comfortable and afforded the visitor some chance of appreciating the taste displayed by the exhibitor in his exhibit. A fairly large proportion of the space was taken up by local firms, several well-known chemists and druggists of Edinburgh exhibiting their fine pharmaceutical products and specialities. A feature of the exhibition was the sanitary section, in which were displayed hospital appliances and furniture, models of aseptic operating rooms, &c., included with which was a working model of the septic tank system of sewage treatment. The attendance was good and encouraging to those concerned. We propose to deal at some length with this interesting section in a special article by our commissioner in which the whole of the exhibits will be properly classified, the first section—viz., drugs—appearing in our present issue.

A meeting of the Hospital Reform Association, under the presidency of Dr. Ward Cousins, was held on Tuesday morning. Several papers were read, one of which suggested that a certain number of medical practitioners should be appointed on the executive committees of all medical charities. In that way lay philanthropists who had hitherto pulled the strings of the hospitals with no distinguished success would be kept in touch with the views of the profession. Dr. Rice, of Coventry, described the various attempts which had been made to induce the staff of a badly conducted local dispensary to resign their posts. Those gentlemen, however, not only defied their brethren but also the clearly expressed condemnation of THE LANCET and the *British Medical Journal*. Another speaker stated that one of the Irish colleges had taken action with regard to a diplomate who dealt with a "middleman" to the discredit of his cloth. One of the English colleges, he added, had definitely promised to inquire into the case of any member if clear evidence were forthcoming that he belonged to an association which touted for membership. Several Glasgow practitioners stated that considerable abuse of hospitals went on in their town. The honorary staffs were practically powerless to refuse treatment to applicants unworthy of charitable relief. The system of hospital letters enabled a subscriber of one guinea to demand three guineas' worth of hospital in-patient relief. One speaker gave a specific instance of a patient of his own whose personalty ran into five figures and from whose executors he was paid an account of three figures, but who nevertheless died in a hospital. The President emphasised the fact that the hospital staff had great power in their hands by refusing to treat unfit cases, and that the Reform Association was simply the friendly critic, not the enemy, of the hospital system. The work of this body, moreover, was intended to supplement, and in no sense to replace, that undertaken by the

Charities' Sub-committee of the British Medical Association. The secretary, Mr. Garrett Horder, read a short paper on The Dispensary System in Scotland where he concluded that abuses existed just as they did in England. He pointed out the successes achieved by the Association in the past and was hopeful of far greater results in the near future. The figures giving the numbers of patients of medical charities for 1897 in the eight principal Scottish towns are worthy the serious attention of the medical profession.

The Museum of Science and Art was the scene of a successful reception on Tuesday evening, when the Lord Provost of Edinburgh and Mrs. Mitchell Tompson were at home to the Association. The Provost, in his official robes, was attended by the Sword and Mace and a number of the city officials; and among those present, apart from the members of the Association were Lord Strathcona and Mount Royal, Sir Charles Cameron, M.P., Dr. Farquharson, M.P., and Mr. J. G. Weir, M.P. Some 4000 ladies and gentlemen accepted the Lord Provost's hospitality.

The Anglo-American Continental Medical Society, whose object is "to serve as a bond of union between the British and American practitioners established on the Continent of Europe and Northern Africa," gave a luncheon at the Balmoral Hotel on Wednesday. Sir William Turner, who occupied the chair, gave the toast of "The Queen and the President of the United States," and said that the first part of his toast appealed to those of the nationality implied in the word "Anglo," meaning the inhabitants of the United Kingdom, and he would therefore give the toast of "The Queen." This having been duly honoured Sir William Turner remarked that the second part of the title was the word "American," and that in saying this they must all think of the President of the United States, who was at present engaged in a struggle more difficult than any encountered by his predecessors since the days of Lincoln. The Chairman next proposed the "Health of the Society," coupling with it the name of Dr. Miller, of Paris, who briefly replied. Dr. Sandwith, of Cairo, proposed the "Health of the Guests," coupling with it the names of Dr. Condé, of Paris; Professor Baginsky, of Berlin; Dr. H. Curtis, of New York; Mr. Bryant, and Dr. Frederick Roberts. Dr. Condé, in reply, made a happy little speech in French and Professor Baginsky, speaking in English, referred to the friendly sentiments which really existed between England and Germany, though they were sometimes obscured. Dr. Brock, of Rome, proposed the "Health of the Chairman," who replied, and the proceedings terminated.

The election of the Earl of Aberdeen, the retiring Governor-General of Canada, and of Lord Strathcona and Mount Royal the High Commissioner, as honorary members of the Association, was a graceful recognition of the services rendered by them to the Association at its meeting in Montreal last year.

At the special invitation of the Livingstone Medical Missionary Society the collection of medical and surgical antiquities from Pompeii and Rome were placed at the disposal of the authorities in Heriot's Hospital by Messrs. Oppenheimer and Co., and excited considerable interest. The collection was substantially the same as that exhibited in the Savoy Hotel on the occasion of the meeting of the Association in London in 1895.

The breakfast at the Edinburgh Café under the auspices of the British Medical Temperance Association was well attended. Professor Simpson occupied the chair. The annual report showed that satisfactory progress was being made by the society, the increase in the number of student-associates being noteworthy. The President, Dr. G. Sims Woodhead, said he had been accused of having asserted that alcohol as a drug was absolutely of no use. What he had asserted was that if alcohol was a drug it must be treated as a drug. Dr. Clouston said the first mental effect of alcohol was to diminish the power of control, and in his opinion no man should take alcohol before his beard had grown. Dr. Ridge (the honorary secretary), Dr. Connell of Peebles, and Dr. Young also spoke.

On Wednesday afternoon a garden-party was given to the members of the Association at Craig House by special invitation of the managers of the Royal Asylum, the guests being received by Sir Alexander Christison and Dr. Clouston. On the same afternoon parties were given by Mrs. Ford at Dreghorn Castle and Mrs. Nelson at Salisbury Green. Receptions were also held by the Public Health Committee of the Corporation of Edinburgh, by the Scottish Society of Painters in Watercolours, and by the Town and Gown Association. In the evening a soirée was given by the President and local committee of the Association in the McEwan Hall and New University Quadrangle.

On Thursday afternoon Professor Annandale delivered the Address in Surgery at the third general meeting. Receptions were held by the Senatus Academicus of the University of Edinburgh the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Medical Society. A garden-party was given at Inverleith House by Professor and Mrs. Bayley Balfour. In the evening the annual dinner of the Association was held in the Music-hall, George-street.

THE selection of Portsmouth as the place for the next annual meeting of the Association is a fitting response to the invitation more than once extended to the Council by the practitioners of that important city. Dr. Ward Cousins's work for the Association has earned him the presidency and we congratulate him upon it.

THE GENERAL MEETINGS.

THE FIRST GENERAL MEETING.

The first general meeting of the Association was held in the McEwan Hall of the New University Buildings at 2.30 P.M. on Tuesday, July 26th. Previously to the opening of the proceedings Mr. Collinson, organist of St. Mary's Cathedral, gave a recital on the magnificent organ. At 2.35 the members of the Council, headed by the Corporation of Edinburgh in their scarlet gowns, with the City Marshal and the Town Clerk, entered the Hall. The Lord Provost, with the Mace and Sword Bearers, and Dr. Roddick, President of the Association for 1897–1898, brought up the rear, while the organist played the march from the *Occasional Oratorio*.

Dr. RODDICK proposed that the minutes of the last meeting should be taken as read, which being agreed to they were confirmed and signed. Dr. Roddick next said that it became his very pleasant duty to resign the Presidential chair in favour of Sir Thomas Grainger Stewart. No introduction of the new President for the coming year was needed by the citizens of Edinburgh or the profession or any country. "In Canada, my own country," continued Dr. Roddick, "his name is a household word, for he has had to do directly or indirectly with the training of most of the more eminent medical men in the Dominion." Dr. Roddick then proffered his warmest thanks to the Association in general, to Dr. Robert Saundby, President of the Council, and to Mr. Francis Fowke, the general secretary, for their kindness and able assistance to him during his term of office.

Sir THOMAS GRAINGER STEWART then took the chair and at once called upon the Lord Provost, Mr. MITCHELL THOMSON, to address the meeting.

The LORD PROVOST said it was his very pleasant duty, on behalf of the municipality and citizens of Edinburgh, to offer a very hearty welcome to the members of the British Medical Association. No one would accuse him of speaking in any boasting spirit were he to say that the Association could not have chosen a better place for its deliberations than the ancient city of Edinburgh; for to say nothing of its historical associations it possessed one of the foremost medical schools in the world. Referring to the share which the town council possessed in the patronage of the University chairs he said that the distinctions which Edinburgh had won showed that the council had exercised its patronage with judgment. Sir William Turner, a man deservedly honoured in Edinburgh, had lately been called to the proud position of President of the General Medical Council and only the other day he (the Lord Provost) had had the honour of conferring the freedom of the city upon Lord Lister. It was gratifying to know that their new President was one so well known and honoured as Sir Thomas Grainger Stewart. In conclusion, he would beg to ask members of the Association that they would not allow too strict an attention to business and scientific work to interfere with their enjoyment of the various social functions which had been organised for their entertainment, for it was the desire of the whole city to make their stay as pleasant as possible.

The PRESIDENT then warmly thanked the Lord Provost and the Corporation for their welcome and proposed a vote of thanks to Dr. Roddick and that he should be elected a Vice-President for life.

This was carried unanimously, and Dr. RODDICK in returning thanks mentioned that many other places in Canada, even far distant Victoria, were ready to receive the Association with open arms.

The Lord Provost and the Corporation then retired.

The consideration of the report was then proceeded with and the following recommendation of the Council with regard to the election of new honorary members was unanimously adopted:—

> At the meeting of the Association at Montreal no one contributed more to its success than His Excellency the Governor-General the Earl of Aberdeen and the Right Hon. the High Commissioner for Canada, the Lord Strathcona and Mount Royal. At the request of that meeting and in hearty concurrence with it the Council desires to recommend them to you for election as honorary members, in accordance with By-law 6, and considers that by so doing you will honour the Association even more than you honour them. The Council also recommends the election of Professor Francesco Durante, the eminent Italian surgeon, as an honorary member of the Association.

The PRESIDENT then handed the roll of membership to Lord Strathcona, who was present, remarking that Canada seemed destined to be firmly associated with medicine. Sir Charles Tupper, a late High Commissioner for the Dominion, had given up medicine to become a politician, and now they had a distinguished Canadian politician and the present High Commissioner becoming a doctor.

Lord STRATHCONA briefly returned thanks.

Dr. SAUNDBY then moved the adoption of the report. He referred to the increase in membership of the Association (1473 for the past year), to there being a surplus of over £3000, and to the successful negotiations for the purchase of the freehold of the premises in the Strand, Agar-street, and Harvey's-buildings. The death of Mr. Ernest Hart had been a great loss to the Association and especially to the *British Medical Journal*, but he felt sure that Dr. Dawson Williams would prove to be an able successor. With regard to the question of medical defence the result of the postcard plebiscite was that only one-third of the members had answered in the affirmative and so in the words of the report—

> Your Council is of opinion that the affirmative majority constitutes too small a proportion (one-third) of the whole Association to justify further steps being taken in a matter so seriously affecting the organisation and working of the Association and respecting which such grave differences of opinion are known to be entertained.

Dr. J. MYRTLE (Harrogate) then moved as an amendment:—

> That the question of undertaking medical defence by the British Medical Association having been decided by a majority in favour at the annual general meetings in London, 1896, Carlisle, 1896, and London, 1897, the Council should undertake to reconsider the report, with a view of bringing this great question to a satisfactory issue.

This was seconded by Mr. GEORGE JACKSON (Plymouth).

Mr. VICTOR HORSLEY pointed out that although postcards were sent to every member it was well known that should the Council take up the question it was only intended to apply to the United Kingdom. Now of members in the United Kingdom 60 per cent. answered in the affirmative. He was quite aware that the profession was sadly in need of being waked up, and the Council ought to have subsidised the Medical Defence Union to do this.

Dr. J. HUDSON said that the Association should stick to what it was originally founded for—namely, the advancement of science.

Dr. WARD COUSINS said that the question of subsidising involved a quantity of difficulties.

Dr. WOODCOCK said that he had reluctantly come to the conclusion that for the Association in its present state of division on the question to take up the matter would result in hopeless failure.

Mr. GARRETT HORDER said there was no doubt a very strong desire among the profession that the Association should take up the question, and

Dr. MUIR (Glasgow) said that in his branch only 3 members voted against this proposal and they were all consultants.

On Dr. MYRTLE'S amendment being put to the meeting 101 voted against it and 89 for it.

The amendment was thus negatived by 12 votes, but the members of Council present naturally voted in the majority and they numbered quite 12.

The report was then adopted, after which the reports of committee were considered, and the meeting shortly afterwards adjourned.

THE (ADJOURNED) FIRST GENERAL MEETING.

The adjourned meeting met again on Tuesday evening at 8.30, at the McEwan Hall, to hear Sir Thomas Grainger Stewart's Presidential address.

PRESIDENT'S ADDRESS.

Sir THOMAS GRAINGER STEWART commenced by a few hearty words welcoming the Association to Edinburgh and pointing out how necessary it was that a common understanding should exist between the medical profession and the public as to the position of medicine. He then continued:—

The prevention of disease is in its practical results perhaps the most important of all our duties. It is our chief glory that we have been able to accomplish so much. It is our highest hope that we shall accomplish more. The several members of the great group of diseases which owe their origin to invasion by pathogenic micro-organisms are in course of being rationally explained and so it is becoming possible for us to take measures for their prevention. In some of them we can prevent the development of the organisms. In some we may hinder their multiplication and spread. In some we can block the channels by which they have been accustomed to find entrance into the body. In some we are able to modify the germ so that it produces when inoculated a milder disease and yet a disease capable of conferring immunity against the malady in its ordinary form. In some we can interfere with the action of the germ even after it has been introduced or counteract the poisonous substances which the germs generate. With regard to the important group of diseases due to faulty chemical processes we have learned much that is of service for prevention. We have traced the origin of some diseases to the subtle action of chemical substances introduced with the food or in the exercise of various trades and crafts. We have learned not a little regarding toxic substances which are developed within the body from faulty chemical processes or which accumulate as a result of deficient elimination. And most recently of all we have traced important diseases to deficient or excessive supply of what we have come to know as internal secretions; and each discovery which renders the causation of a disease more clear contributes something towards its prevention. Every member of the profession ought to be keeping his eyes open to the advances of science, for in that he may find explanations of morbid action as Lord Lister did in regard to wounds and ought to be always seeking for an explanation of the occurrence of disease, and especially of epidemic outbreaks, for by watchfulness in such matters mighty results may be achieved, as the work of such men as Snow and Budd and Koch has shown. The public may in many ways benefit from such discoveries and the precautions they suggest. Individual health, family

health, social health, and national health, may all be improved if the individual, the head of the family, the employer of labour, and the legislator duly study and act upon these lessons. It is their duty to do so. But an intelligent appreciation of these subjects is not easily attained. Perhaps we are ourselves in some measure to blame for this because our professional customs do not readily lend themselves to the issuing of clear and popular statements by leaders of medical opinion in such forms as would enable the public to share our knowledge. We ought to take more pains to instruct the public in such questions. Individual members of the community should seek to understand how their own personal health and that of their families may be protected when they act according to the light of modern science. Employers of labour should modify the conditions of their work, as, indeed, so many of them do, with the view of warding off the special dangers proper to each occupation. Teachers and governors of schools should study zealously all that we are learning with regard to the evils of deficient ventilation, of cramped attitudes, and of excessive or too prolonged mental effort. In unnumbered ways may intelligent and well-instructed men ward off dangers by attending to the hygienic rules of modern science. But apart from all the private applications of hygienic laws rises the question of the duty which the legislature owes to the facts of medicine. It is an interesting question whether under our democratic constitution we are in a better or worse situation in this matter than we might have been under an absolute monarchy or an oligarchy. It was perhaps easier in the old days when a monarch was absolute to get him to understand medical questions; a Linacre enjoying the confidence of a Henry VIII. or a Harvey that of a Charles could command a sympathetic appreciation of facts which might readily result in valuable Royal edicts. One can conceive that had supreme power been vested in the hands of such a man as the late Prince Consort his fine perception of scientific facts would have led to his being the friend of such men as Chadwick, Farr, Parkes, and Richardson, and that at their suggestion effect would have been given to every legislative advance that medicine justified. And even in oligarchic days one can understand how a group of men wielding the whole power of the State might similarly be convinced and might promptly bring into action legislative machinery for the prevention of disease. But now when every man is a king, when the whole people rule, it is perhaps not so easy to attain the results which we desire. The whole community requires to be instructed before the lessons can be used to good purpose. It is our task to give that instruction; it is theirs to give effect to what we have taught. The country has since the Queen's reign began awakened to the benefits which legislation in medical matters may afford and history will recognise the fact as one of the chief glories of the Victorian era.

Progress in Medicine and the Position of Vaccination.

But I wish that our progress were more satisfactory. Take, for example, the great subject of the prevention of small-pox. With scarcely a dissentient voice the medical profession recognises the transcendent value of vaccination. A Royal Commission laboured for many years and at last reported unequivocally in favour of that treatment. But with a determination which would be admirable if it were not so disastrous a comparatively small group of men set themselves to opposing and maligning the process, belittling its advantages and magnifying and multiplying the slight risks which attend it. To these a considerable section of the English public have given heed rather than to the medical profession — I speak advisedly of English public for, as Mr. Balfour has pointed out, the public of Scotland remains loyal to medical opinion. But from the attitude of certain districts in England it comes about that the greatest discovery in practical medicine, although it had its native home in Britain, is less efficiently carried out here than it is in many parts of the Continent. In Germany small-pox has practically disappeared; there has been no death from it in the whole of the vast German army since revaccination was made compulsory. In 1853 and 1867 Acts were passed for compulsory vaccination in England. These Acts have been the constant object of attack by the anti-vaccination propaganda. The Vaccination Commission was a result of these attacks. It included active opponents and active supporters of the process, with some members who were understood to take up the inquiry without any definite pre-formed opinion. After seven years' labour they gave in their report. By a majority of 11 to 2 they found that vaccination was a valuable preventive of small-pox; that the process could not be safely abandoned and replaced by other precautions; and that while some alleged dangers are real they are in truth unimportant in relation to the extent of vaccination work done and are diminishing under the better precautions of the present day. More than a year elapsed before legislation was attempted and the Bill was introduced of which the third reading occupied the House of Commons to-day. That Bill contained good provisions in the way of postponing the date of compulsory vaccination of infants, providing for the treatment being carried out at home, the supplying of calf lymph, and taking advantage of Dr. Copeman's valuable discoveries regarding the special security afforded by glycerinated lymph. But the Bill made one disastrous omission. It proposed nothing in the way of revaccination. Now, experience has proved that the protection afforded by the process requires to be renewed from time to time and has amply shown that here, where it has been tried in many ways, as well as in Germany, where it has been since 1874 compulsory, repetition of the process secures an almost absolute immunity. It is in my opinion, and I am sure in that of almost the whole profession, profoundly to be regretted that the Bill contained no proposal in regard to revaccination. It is grievous to think that we lag behind and are deprived of securities which would be of such value and might so readily be obtained. But if this was a disastrous omission the Bill as it leaves the House of Commons shows another defect, for in the course of last week's debate it was decided that "no parent or other person shall be liable to any penalty under the Vaccination Act, 1867, if he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child."

The first remark that I would make is that this clause admits the status of the "conscientious objector" and gives him rights and privileges. An analysis of conscience is always attractive to a Scotsman, but I refrain from attempting to forecast how the process would work out either in regard to that of the "conscientious objector" or those of the justices of the petty sessions. But the right of a person to act according to his conscience is one which a democracy is bound to protect. Only whenever it is distinctly proved that the result of conscientious objections is really dangerous to the well-being both of the individual concerned and of the community, the community is, in my judgment, entitled to set aside the conscientious objections and to insist upon obedience. The Commissioners, who acted as a jury for the nation in this matter, are satisfied that the abandonment of vaccination would inevitably lead to formidable evils. It seems, therefore, to me that the plea of conscientious objection affords no logical ground for resistance to the law. The second remark which I would make is to inquire what the term "conscientious objector" might be made to cover. This is no easy task, but it is safe to say that it would include a great deal more than the strict use of the words should warrant. And besides if this plea be once admitted we may find conscientious objectors springing up in many other quarters. In questions of education they might make themselves heard. In regard to the payment of taxes conscientious objections, if once admitted, would no doubt spread with great rapidity; and in regard to the sanitary laws, the liquor laws, and many other subjects conscientious scruples might soon assert themselves in somewhat startling ways. But apart from speculative opinions let us see what different parties are saying about the practical result of the clause. Mr. Chaplin, who did his best to stand to his ground, says that the administration of compulsory vaccination in the future will be absolutely impracticable and no Ministry will be able to enforce it. Many share his opinion and regard the outlook as gloomy in the extreme.

The anti-vaccinationists are jubilant. One of their representatives on the Commission says that the practical conclusion of the whole matter and the results of the Royal Commission's labours amount to the abolition of compulsory vaccination for a generation. There is another class, that which believing in vaccination and desiring to see it established, yet may be ranked as advocates of "freedom before security." Some of them would not accept that motto, but I think it is just. I sympathise with the love of freedom, but would not have it override the well-being of the community. I cannot advocate freedom to do mischief and to that result this kind of freedom inevitably tends.

In this matter is it not to be feared that the House of Commons has decided contrary to its own belief? There must be but few Members who do not believe in vaccination and would not desire to see it insisted upon. Why have they voted as they did? Was it not on the part of some a weak yielding to the bigoted prejudices of their constituencies? Would they ever have dreamt of acting as they did but for this influence? And may it not be said that in the case of others the "conscientious objector" has made cowards of them all? I should be sorry to suggest that anyone sought to make party capital out of such material. May we look to the House of Lords for reconsideration of this subject? They have sometimes asserted an opinion. What is their opinion on this matter? We here at all events are, I suppose, practically unanimous in our regret that the exigencies of Parliamentary government has led us into such a retrograde position. I wish that the Legislature would boldly accept the principle that as it is mainly guided by the opinion of lawyers as to legal questions, by those of soldiers in matters military, by practical seamen and engineers in matters concerning their department, so in medical questions they would look for guidance to the medical profession and give effect to its matured opinion. Then we should have less difficulty about the question of vaccination or that of the treatment of inebriates or the prevention of the risks attending certain callings, such as those which expose the workers to lead-poisoning or to poisoning by phosphorus, and we should soon find the statute-book enriched by further beneficent enactments which would save multitudes of lives and immensely diminish sickness and suffering.

[After briefly pointing out the widespread character of the researches for the advancement of scientific knowledge now being undertaken and the necessity for the training of the medical profession and the adequate guarding of the portals thereto the President continued:—]

Medical and State Medical Organisations within the Profession.

I wish we had time to consider together the various organisations which have sprung up in the profession and have been recognised by the State or which the State has instituted for dealing with matters medical. Time would fail me to speak of the origin and the services of the ancient guilds of surgeons and the Royal Colleges, profoundly interesting as that subject would be; nor can I speak of the growth of the medical faculties of the universities, or the medical schools which are now scattered so numerously throughout the kingdom, or of the societies which do so much, not only in the great centres of medical education, but in every considerable city and in almost every district of country throughout the empire. But I must allow myself time to refer to that Association in connexion with which we are assembled here this evening. Little more than fifty years ago it took origin as the Provincial Medical Association and only after a time did it spread to London. It is forty years this week since it first ventured to cross the border and hold a meeting in Scotland. It now consists of upwards of 17,000 members, all legally qualified practitioners, admitted after careful consideration, and resident in all parts of the empire. In every district the Association is represented by branches, each of which serves important local purposes and takes its share in determining the policy of the whole Association, through its representations to and representatives on the Council. I think that the Association will do well to foster the vigour of life in the branches. Its journal has a circulation of more than 20,000 weekly and is recognised as one of the leading medical periodicals of the world. The objects of the Association are the promotion of medical and allied sciences and the maintenance of the honour and the interests of the medical profession. This is effected by the holding of meetings, the publication of a journal and transactions, the granting of money for promotion of science and for defence and promotion or maintenance of the honour or interests of the medical profession by such means and such manner as the Council may think fit, including, in particular, taking or defending legal proceedings and promoting or opposing Bills in Parliament. These objects seem to me to be worthy of the high and noble traditions of our profession. It is for the discovery and dissemination of truth and for the maintenance of the rights and influence of the profession as a whole, not for merely private ends, that the Association exists. It is our duty to inquire how far these purposes are being fulfilled. The mere numerical growth to which I have referred seems to be of itself a proof that a useful end is being served. The value of the journal to the profession cannot be overstated, especially now that such excellent epitomes of recent observation are sent out with each number. I am sure that no member can attend an annual meeting without being enriched in knowledge and inspired with new ideas. The mere contact with other minds is of inestimable value and every man who is thinking for himself or doing original work finds fresh light thrown upon his results by the results of the efforts of kindred intellects.

The Association has for many years devoted considerable sums of money to the endowment of research and much has been accomplished by its research scholars and others whom it has helped. It exerts a considerable influence in regard to public affairs connected with medicine. Our council laboriously considers all questions of medical interests which concern the profession and I can assure you that I had no idea until I came to serve on that body that its work made such demands upon the time, energy, and ability of its members, nor did I realise the far-reaching influence which it exerts. The Parliamentary Bills Committee is now presided over by a distinguished graduate of this university, who is at the same time one of the most popular Members of the House of Commons. The influence of that committee in helping to form opinion among our legislators is very considerable and I have no doubt it will increase as time advances. Apart from that committee the Association is able to intervene with good effect in other ways. No better illustration could be offered than our recent experiences in relation to the Medical Department of the Army. For the Association had its share in making the representations to the Minister of War which have resulted in so hopeful a reorganisation of the whole Army Medical Service. I can speak personally of the courtesy and encouragement with which your deputation was received and I am sure that no one who heard the statement by the Marquis of Lansdowne at the great banquet given by the Lord Mayor of London could fail to see that the intervention of the Association had been attended by the happiest result. Not that we are to claim all the credit, for the hard facts of the state of the Service had been pressing themselves upon the attention of the authorities and many influential representations had been made regarding the questions involved. As time goes on and our influence increases the Association may often be able to perform like service for the profession and for the country.

The General Medical Council.

Among the institutions which, although suggested by medical men, were instituted by the legislature I should mention first the General Medical Council. We have now had forty years' experience of that body and I for one think that it has done good service to the profession and the State It has raised the standard of preliminary examinations; it has extended the period of medical study; it has set its face against the custom of legally qualified practitioners evading the law by what is known as covering others who are not qualified; and it has recently passed a strong resolution against the employment of unqualified assistants, which, however hardly it may press upon the individuals who are worthy of all sympathy, is undoubtedly sound in principle. Its powers have been more limited than might have been desired and perhaps they might be extended and increased with advantage. To take a single instance, I would suggest that just as a diploma of a university or a college entitles the holder, whoever he may be, to be placed upon the Medical Register and gives him all the privileges attached to such registration, so the decision of the General Medical Council that any person on the Register is no longer worthy to have his name retained upon it should *ipso facto* deprive him of the diploma or the degree upon which he had been registered. It seems absurd that there should be a necessity for renewing and repeating the trial in such a case. The decision of the supreme court of the profession should, I think, be held to cover and to include that of the licensing bodies and even of the universities. The legislature is already acquiring the habit of now and then referring a question or an opinion to the General Medical Council, and it seems to me that much would be gained if this expedient were more frequently adopted in regard, not to that Council alone, but to the Association which we here represent.

The Public Health Executive.

This brings me to speak of the Public Health Executive, the officials who are entrusted with carrying out the laws relating to disease and its prevention. The formation of the department was—like most British institutions—an evolution rather than a creation. For when the Government felt the need of establishing such a branch of the executive it did not construct a new board or appoint new officers beyond what was absolutely necessary, but rather laid additional duties upon boards and officials already existing. There is no need for me to explain the precise arrangements adopted either in England or in Scotland, but in a general way I may say that in the former the new duties were entrusted to what had previously been the Medical Department of the Privy Council, the engineers of the Local Government Office, and the members of the Poor-law Board; while in the latter the board originally established for carrying out the Poor-law of 1845 was turned to account for the new purpose. They were named in each division of the country "The Local Government Board." But these boards were not entrusted with the carrying out of the whole work relating to public health. Sir Benjamin Ward Richardson pointed out nearly twenty years ago that that work is too widely distributed. He said that so much had to be done by the President of the Local Government Board, so much by the Secretary of State for the Home Department, so much by the Registrar-General, so much by the Chief Commissioner of Works, so much by the Lord President of the Privy Council, and so much by the President of the Board of Trade, and all that without reckoning the heads of the army and navy departments, the Postmaster-General, and even some other important officials. On the other hand, the duties of the Local Government Board naturally included, considering its mode of construction, much that might well have been relegated to other departments—as, for example, many matters relating to Poor-law administration. All this might surely be simplified with much advantage. The department has grown so great and so complicated and the importance of the work of some of its parts has become so much more appreciated that it demands reconstruction. I should like to see the Local Government Board entrusted with every question which bears upon the prevention of disease. It should have two divisions—one dealing with the questions of local administration and the other with the public health. These two sub-divisions would cover the whole work at present undertaken and which properly belongs to this great department. The President of the Board thus reconstructed should be recognised as an official of the higher rank and should indeed be not only a Minister, but a Secretary of State for the department. It would be a great benefit that he should be an officer of such dignity and influence as that he would be able to secure in the Cabinet and in Parliament due attention to the subjects with which he has to deal. He might be a Member of either House, but considering the frequency with which financial questions must emerge it would probably be better that he should sit in the House of Commons. He would, of course, have a Parliamentary and a permanent Under-Secretary, the former of whom should also, as at present, be a Member of the House, who should take his share in the administration of the department, and in the absence of his chief answer questions and be available for reference and inquiry in the House on any subject connected with the department. The sub-department should also be maintained, at which information, advice, and direction upon all sanitary questions may be obtained, while at the same time it continued to organise and carry out scientific investigations somewhat on the lines which are at present followed. There should also be other sub-departments dealing with various branches of the subject, as, for example, with the registration of births, deaths, and marriages; with the incidence of notifiable diseases, epizootics, and diseases of plants (unless this is sufficiently provided for by the Board of Agriculture), with meteorological and other reports; with the working out of the various Public Health Acts; with the Vaccination Acts; the medical questions arising under the Factory Acts; with the care of the insane; with all questions as to the disposal of the dead, and such like. There are already officials entrusted with nearly all these duties and in many respects the department is admirably equipped. All that would be required in many instances would be the grouping of them afresh and the clearing up of the precise details as to their work.

I am well aware that it is a serious thing to suggest the addition of even one Minister to the Cabinet and still more to suggest that he should take so high a place as that of Secretary of State; but even with the difficulties which I admit it seems to me obvious that the great importance of the public health, equalling, indeed, that of almost any other department in the State, warrants such a step. And as I believe that history will regard it as one of the chief glories of the reign of Her Majesty that the nation thus awoke to the importance of the question of public health, so I should desire that the executive which subserves it should in that reign also be put upon a footing worthy of the greatness of its work. In respect of the duties of administration as well as of legislation such changes as I advocate would give a great increase of efficiency.

Conclusion.

But I have reached the utmost limit of my time and must hasten to conclude. I have briefly reviewed what I consider the chief relative duties incumbent upon us and the community. I have shown that in our personal relationships things stand fairly well, but that in regard to preventive medicine the attitude of the community and the State leaves much to be desired. I have shown also reason to think that there is room for more generous dealing in respect of the endowment of research and of universities and schools. But I should sum up by saying that our part is to perform our duty conscientiously and to the best of our ability. It is not by banding ourselves like a trades union and crying aloud about our wrongs, real or imaginary, but by the efficient discharge of our own duty that we shall best aid the community to perform theirs. When each of us does his best for every patient and for the State, not with eye-service or as men-pleasers, but with a profound appreciation of our grave and sometimes awful responsibilities, then shall we win the place in public esteem which will bring to our beloved science and art and to us the recognition to which they and we are entitled.

SECOND GENERAL MEETING.

The second general meeting was held in the M'Ewan Hall on Wednesday afternoon, the PRESIDENT being in the chair.

The recommendation of the Council that the invitation to hold the next annual meeting at Portsmouth be accepted, and that Dr. Ward Cousins be the President-elect, was unanimously agreed to, and Dr. WARD COUSINS expressed his thanks for the honour conferred upon the Portsmouth Branch and upon himself.

The PRESIDENT then introduced Professor FRASER, who delivered the Address in Medicine, which will be found on page 243.

At the conclusion of the address a vote of thanks to Professor Fraser was proposed by Sir WILLIAM BROADBENT and seconded by Professor OSLER.

After this the hall, which had been very full, rapidly emptied and, finally, there remained only some 25 members in the body of the hall and about 10 members of the Council on the platform. Sir Thomas Grainger Stewart left the chair, which was taken by Dr. Saundby.

Dr. BRASSEY BRIERLEY, who had given notice of moving certain alterations in the by-laws, withdrew them. He then moved the following as an additional by-law:—

A Parliamentary Committee shall be elected annually, and shall consist of one representative nominated by each Branch having over 150 members, four members elected by the Council of the Association at its first sitting, and three members elected by and present at the annual meeting, but none of these latter shall be already a member of the Central Council.

The Parliamentary Committee shall meet at least six times a year, and a sum not exceeding £2,000 a year shall be placed at its disposal.

Mr. BOUSFIELD seconded.

Dr. SAUNDBY pointed out that this would practically disfranchise all the branches, 17 in number, who had under 150 members.

Mr. R. B. ANDERSON having made a few remarks which called forth a spirited and dignified protest from Dr. Saundby, Dr. Brassey Brierley, in the interests of peace, withdrew his motion.

Dr. J. MYRTLE had given notice of the following—

That whereas long delay has taken place in giving effect to and carrying out certain resolutions passed at general meetings of the Association, this meeting calls upon the Council to at once take the necessary steps to apply to the High Court to legalise the new Articles and Memorandum of Association, and, upon this being granted, to forthwith undertake the medical defence of members of the Association.

He now wished to leave out everything after the word

"Memorandum of Association," but Dr. Saundby would not allow this because it would open a door for too wide discussion.

Dr. HADDON moved, "That the scientific grants be discontinued," but could find no seconder.

The meeting then terminated.

THE SECTIONS.

The Sectional work commenced on Wednesday, July 27th, in all the Sections.

MEDICINE.

WEDNESDAY, JULY 27TH.

Dr. G. W. BALFOUR, consulting physician to the Edinburgh Royal Infirmary, delivered the following Presidential Address to the Section, entitled

Personal Experience of an almost forgotten Episode in Medical History.

It has struck me that a few words from personal experience in regard to a now almost forgotten episode of medical history might prove both interesting and instructive. There are not many now alive who remember the time when blood-letting was the panacea for almost every ailment, and when patients could be no longer safely bled they were certainly leeched or cupped. There must be few survivors of the time when one of the earliest lessons in surgery was to distinguish between an ordinary blood-clot and one which was buffed and cupped, or who were taught that in uncomplicated pneumonia such confidence was to be placed in blood-letting that "the only essential action of the prognosis was the day of the disease on which the treatment was commenced," as it sometimes failed when delayed more than two or three days from the commencement of the disease. Yet such were the earliest lessons in medicine which I received, lessons which were daily exemplified in the wards of the old Royal Infirmary. When within a year of my graduation I made my way to Vienna with the view of studying homœopathy, which had just made a convert of one of our ablest professors (Henderson), I occupied my time at first in improving my knowledge of percussion and auscultation under the world-renowned Dr. Joseph Skoda, and you may imagine my astonishment when I found that in his wards the severest cases of pneumonia were treated with poultices and regulated doses of extractum graminis (hay tea) and with nothing else unless much pain was complained of, when a few grains of Dover's powder were superadded. The excellent results obtained by Skoda with his hay tea sufficed to dispel the clouds of mysticism which had been raised by homœopathy, while the success of Dietl in the same class of cases in another hospital with simple aqua colorata showed that there was nothing specific even in hay tea and confirmed the unmistakeable conclusion that, as Skoda put it, pneumonia tended not to dissolution but to resolution and that the large blood-lettings thought necessary for its treatment were, to say the least, uncalled for. Much stress continued to be laid upon the necessity for blood-letting in the Edinburgh school, though it had ceased to be carried to such an extreme as in the immediately preceding generation. On my return from Vienna I read to the Medico-Chirurgical Society of this city a report of what I had observed in the wards of Skoda, with an account of 392 cases of pneumonia treated on what might be termed the expectant principle and showing a mortality of only 54, or 1 in 7¼, equal to 13·7 per cent. I pointed out that the Vienna cases were certainly not less sthenic than those in Edinburgh, that they had the disadvantage of being daily unceremoniously auscultated, percussed, and lectured over, which was not the custom in our infirmary in those days, and that they had not the advantage of having been freely bled, yet their mortality was only 13·7 per cent. In the reports of our own infirmary during the five years and three months from July 1st, 1839, to Sept. 30th, 1844, there are recorded 253 cases of pneumonia which escaped the lecturing and had the advantage of having been freely bled, and of these 91 died, a mortality of 1 in 2·78, or 35·9 per cent., showing a proportion of recoveries of nearly 3 to 1, or over 20 per cent. in favour of those who were not bled, to say nothing of the time gained by their more rapid recovery or of the less exhausted condition in which the patients were left whereby they were sooner fit to return to the duties of active life. I urged upon the society the importance of giving the eclectic system of treating pneumonia a fair trial, throwing out the suggestion—made to me by a distinguished Austrian physician—that possibly some change in the type of the disease might underlie the apparent change in its relation to perturbative treatment. My words fell on deaf ears and the conclusion arrived at may very well be summed up in the words of one of the ablest physicians of the day—Dr. John Gairdner: "Nothing was better established than the good effect of blood-letting in Edinburgh, whatever might be the case in Vienna. ..... Of the benefits of early blood-letting he entertained no doubt whatever; they were positive, immediate, unequivocal, and admitted by almost every physician whose experience and judgment entitle him to consideration; and if Dr. Balfour or anyone else could shake his conviction in the truth of his opinion he would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description, since in no case whatever can we have evidence which is stronger or more satisfactory." I need not pursue the subject further; the eclectic treatment passed gradually into the hands of the general practitioner, and within less than ten years the late Professor Bennett wrote: "It is admitted that the practice of bleeding in acute inflammations has within a recent period undergone a great change; that whereas it was formerly the rule to bleed early, largely, and often repeatedly, now such bleeding is rarely practised and is not necessary." After this we had the war of opinions in regard to whether this change was due to a better knowledge of the natural history of the disease and of its pathology or to an actual change in the type of disease which had become less sthenic in character and no longer required the same heroic remedies. But into this I need not enter; it forms part of the history of medicine, and the object of this short sketch is to point out the importance of a knowledge of this subject. We are now on the threshold of new discoveries and of quite a new pathology, which is indeed but a higher development of ideas which have long been slumbering in the professional mind—the connecting links being Dwight, Raspail, Hallier, and Pasteur—but which seem likely now to attain a development of the highest importance for the well-being of mankind. It is well, however, in the light of the past to remember that disease may be recovered from under many different forms of treatment. The practical certainties of our art in all ages have been sufficient for the welfare of mankind and we must be careful never to subordinate to any vague ideas of what may possibly be curative of disease that which is, after all, the paramount object of our art—the relief of suffering.

A discussion was then opened by Dr. ALEXANDER JAMES on

The Clinical Varieties of Hepatic Cirrhosis.

Dr. JAMES began by pointing out that as regards causation, symptoms, and course the phenomena of hepatic cirrhosis at first sight appeared more clear, well defined, and comprehensible than almost any other disease. In atrophic cirrhosis, for example, we have an irritant, usually alcohol, carried to the liver. There it sets up irritation, as the result of which cell proliferation occurs round about the interlobular branches of the portal veins. Those cells, becoming fibrous tissue, contract, compressing and destroying the hepatic parenchyma, and compressing and obstructing the portal veins. Hence arises congestion of the mucous membrane of stomach and intestine, dyspepsia, hematemesis, ascites, enlarged spleen, &c. In the so-called biliary cirrhosis, there occurs a cell infiltration among the cells of the liver lobules, the result mainly of some biliary irritation. Hence arises the jaundice, and in this variety we have a large smooth liver but no portal obstruction, ascites, hematemesis, or enlarged spleen. But there was, he thought, no doubt that an extended observation of cases showed that liver cirrhosis was not always such a well-defined disease. Cases occurred which began with jaundice and an enlarged liver and in which in time the jaundice disappeared; and with the disappearance of the jaundice symptoms of portal obstruction showed themselves—ascites, enlarged spleen, &c. The author believed that the disease—acute yellow atrophy—showed many resemblances to cirrhosis, for in the less rapid forms of it there were found not only symptoms such as one meets with in cirrhosis (gastro-intestinal irritations, hæmorrhages, &c.), but on post-mortem examination there is found, combined with the destruction of liver cells, an increased production of fibrous tissue. The author next discussed how an irritant could at one and

the same time produce destruction of liver cells and increase of its connective tissue, after which he pointed out that in liver cirrhosis, although the irritating factors might be many, the results were the same. He then delineated four types of hepatic cirrhosis which he thought might be regarded as legitimate varieties—(1) the purely atrophic, (2) the purely hypertrophic, (3) the transitional form, and (4) the form which, occurring in younger individuals, might be the result of congenital causes or of some local condition, such as peritonitic adhesions.

In the discussion which followed Dr. ROSENSTEIN (Leyden) thought that alcohol as a factor in the production of cirrhosis of the liver was very much overrated. In Holland, where enormous quantities of alcohol were drunk, cirrhosis was not met with in like proportion.—Dr. OSLER (Baltimore) thought that the possibly bacterial origin of some kinds of cirrhosis was worth bearing in mind.—Dr. BRADBURY (Cambridge), Dr. EWART (London), Dr. BOYD (Belfast), Dr. HANDFORD (Nottingham), Dr. GERHARDT (Berlin), Dr. DRUMMOND (Newcastle), Dr. ROSENBACH (Berlin), and Dr. ALLISON (Newcastle), also took part in the discussion, the general opinion being that although many anatomical types existed with well-defined pathological differences, it was not always easy to trace the clinical distinctions, excepting only that the small atrophic liver was usually associated with ascites and jaundice was a subordinate feature; while, on the other hand, the large hobnailed liver was frequently associated with jaundice and the ascites was less marked than in the other kind.

A paper on

The Bacteriology of Cirrhosis of the Liver.

(illustrated by numerous lantern slides) by Professor J. G. ADAMI (Montreal), was read by Professor WM. OSLER (Baltimore). It was at the outset pointed out that the experimental injection of alcohol results in fatty liver with at most only a very slight amount of fibroid change in the portal areas. Not a single observer has by this means, and after treating animals for many months, been able to produce anything at all resembling the extreme deposit of fibrous tissue met with in typical hobnailed liver. On the other hand, evidence has been accumulating—notably in India—that extreme cirrhosis may attack children and adults who have never taken a particle of alcohol. Within the last few years some French pathologists, notably Hanot, have regarded the enlarged cirrhotic liver which is associated with jaundice as being of infectious origin and have made use of the term, *le foie infectieux*. But no microbe has been identified and the only case in which a diplococcus was isolated was complicated by endocarditis and suppurative meningitis. After alluding to the possible association between cases of "Hanot's cirrhosis" and "epidemic jaundice" the author passed to the description of his own researches made in connexion with a very remarkable disease affecting cattle in a limited area in Nova Scotia—the so-called Pictou cattle disease—of which the main lesion is a singularly extensive cirrhosis of the liver. This disease appears to have been endemic for forty years in this district, slowly spreading from one animal to another. "The first symptom noticed is a bitterness in the milk and in time the beast dies slowly from exhaustion." The author killed and examined some thirty animals, the main lesions being an extreme condition of generalised hepatic cirrhosis, not only periportal but pericellular, the organ being enlarged and smooth; the gall-bladder was full and fæces were stained and a moderate amount of ascitis was present. Numerous follicular ulcers were present in the fourth or true stomach. These gave the impression that the earliest lesions are the gastric changes, which are followed by the infection of the abdominal lymphatic system and portal area. The spleen was not markedly enlarged. From all the animals a characteristic micro-organism was obtained. It was a polymorphic organism, its most usual form being a short bacillus with polar staining, resembling in some respects the micro-organism of hæmorrhagic septicæmia in the lower animals, but differing in essential features. It was pathogenic for rabbits, guinea-pigs, and mice. The author was struck with the clinical similarity between this disease and portal cirrhosis in man, and he has since endeavoured to reveal a microbe in cases of the latter. In one case a microbe was procured, but it died on the fifth day. The chief difficulty lay in the staining of the micro-organism in the tissues, all colours tried having faded so rapidly. This was overcome by bleaching very deeply stained sections in the sunlight for a short time daily for two weeks or more. In this way, using carbolised fuchsin, the author had been able to discover the same characteristic organism in the cells of all the cirrhotic livers he had examined during the last three years—26 in number—whether of the small shrunken type or the large hobnailed type, whether associated with jaundice and without ascites or associated with ascites and without jaundice. Lantern slides of the micro-organism were exhibited on the screen and the author entered very fully into the methods of staining and of revealing it in the liver cells. It is extraordinarily minute, requiring some experience on the part of the observer and the highest powers of the microscope ($\frac{1}{12}$ or $\frac{1}{16}$ in.) to discover it in the liver cells, in which, however, it is to be found in great abundance. According to the depth of the stain so does it appear, either as an ovoid bacillus (which might easily be mistaken for some stained deposit in the liver cells) or as a minute diplococcus surrounded by a distinct halo. The author knows of no organism so minute, save that recently described by Nocard and Roux as being the causative agent of the contagious pleuro-pneumonia in cattle, and the strain upon the eye of the observer is very severe. The question as to whether the micro-organisms in the human and bovine livers are identical is impossible to decide absolutely at present. It must suffice for the present to state that a characteristic microbe is present in the Pictou cattle disease—a disease having certain close resemblances to progressive cirrhosis of the liver in man—and that large numbers of a micro-organism have been revealed by special methods devised by the author in the lower cells in cases of cirrhosis in the human being; and, finally, that these two micro-organisms greatly resemble each other under the microscope. In an appendix to the paper the author mentioned a case of cirrhosis on which he had just made a post-mortem examination, and in which he had discovered the same micro-organism. Time had not permitted him to make cultures, but this he was about to do. The micro-organism isolated from cattle is polymorphic, appearing as a small diplococcus when grown on broth and tending to assume a distinctly bacillary form when grown on solid media.

Dr. WILLIAM BAIN (Harrogate) read a paper on:—

The Extent of Congestion of the Liver not Dependent on Organic Disease.

The type of disease considered was a chronic form of active congestion independent of organic disease, apyretic, and having existed for a few weeks or months. After considering some of the signs and symptoms of the condition he passed to consider the treatment, of which there are two kinds—that which can be carried out at home and that which necessitates going to a spa. The former might consist of a daily bath (70° to 90°), and some counter-irritation to the liver on alternate nights with cholagogues. The spa advocated was the sulphur spring at Harrogate and in some cases the Kissingen waters, either of which might be combined with deep massage of the liver.

Professor MCCALL ANDERSON (Glasgow) read a paper entitled—

A Plea for the more General Use of Tuberculin.

At the outset he expressed his regret that the wide-spread laudation with which the tuberculin treatment was ushered in had given place to an almost total neglect of it by the bulk of the profession in this country. The reasons of this were not far to seek. Too much was at first expected from it and it was used in too wholesale a manner; the cases were not selected carefully enough and the doses were generally too great or the intervals between the injections too short. After giving the original tuberculin a fair trial he was satisfied of its value and gave cases illustrative of its use (*a*) for diagnostic purposes; (*b*) for discovering foci of disease in unexpected situations; and (*c*) as a curative agent. He had not had sufficient experience of the new tuberculin to enable him to compare it with the old, but he was rather inclined to think that the former is the milder and safer of the two for purposes of treatment, while the latter is probably more useful for purposes of diagnosis. The latter is certainly much cheaper, the full dose costing less than a penny, as against seventeen shillings in the case of the new tuberculin. While admitting the accuracy of many observers to the effect that the treatment is often only temporarily beneficial, he suspected that this not infrequently arises from omitting to act on the principle that there are two almost equally potent factors in the production of tuberculous disease—viz., (*a*) the tubercle

bacillus, and (*b*) the soil favourable to its growth and development. In all cases, therefore, the tuberculin injections must be combined with good food, pure air, cod liver oil and other anti-strumous remedies, if permanent beneficial results are to be obtained.

Professor ROSENBACH (Berlin) read a paper on Locomotor Ataxy; and

Dr. T. F. S. CAVERHILL read a paper on the Open Air Treatment of Consumption, and exhibited six patients who had been under treatment at Nordach. The discussion of this subject was adjourned to the next meeting.

SURGERY.

WEDNESDAY, JULY 27TH.

The Presidential Address in this Section was delivered by Dr. JOHN DUNCAN, consulting surgeon to the Edinburgh Royal Infirmary, who chose as his subject

Modern Operating Theatres.

After a few words of welcome to his hearers Dr. Duncan said: To one who can look back over thirty or forty years no fact in medical education bulks more largely than the increasing importance of our examination system. Formerly examinations were meant to eliminate the useless; now they dominate the teaching. In some respects this is matter for regret, but there is hope that if a little breathing space be accorded we shall gradually educate the examiners to recognise that the candidate is not a finished practitioner familiar with every meaningless detail, but that the chief business of the teacher is to make men think and of the examiner to find out how far that has been successful. Meantime, however, this educational movement has done much good and one of the most distinct benefits has been increased attention to the practical and clinical. You will find evidence of this in the laboratories and museums which are now attached to every department in our new university buildings and in the associated schools and which culminate in the admirable laboratory of the Royal College of Physicians of Edinburgh and in the important Museum of the Royal College of Surgeons of Edinburgh. The managers of our infirmary have not been slow in responding to this movement. Extensive additions have been made to the pathological and other departments, but I may specially direct your attention to two points which are surgically interesting. The first is that we have now all but completed the arrangements whereby a surgical theatre shall be placed at the disposal of each set of wards. When not many years ago we moved into the present buildings we found that one spacious theatre had been provided in which it was intended that all operations should be performed. But the antiseptic system has thrown open to surgery so wide a field and the population of our towns has so greatly increased that our youngest surgeon now performs almost as many operations as were performed in the whole infirmary in the days of Syme. Moreover, students do not flock nowadays to the surgical theatre as the populace used to flock to an execution, or at least not to the same extent as formerly. The glorification of mere manual dexterity has also greatly diminished. It is seen that if you know what to do there is little difficulty in doing it. And so a surgical operation has come to be regarded as an incident in a case, and the theatre has become an appanage to the ward, in which whatever manipulation is necessary may be carried out in the way most advantageous to the patient and most beneficial to the student as a sequel to the diagnosis and a preliminary to the after-treatment. You will see also that not only have the new theatres been constructed according to modern ideas, but that the older have also been remodelled on the same lines. Our managers deserve all credit for this endeavour to meet modern requirements, but I am not of those who have great faith in surgical upholstery. I cannot believe that the expense which has been incurred here and elsewhere in transforming cleanly and well-ventilated theatres into stuctures of tiles and glass was a necessary expenditure. It may be said that it is all in the right direction, but there are considerations worth bearing in mind before the money of a charity is expended in costly reconstruction. In the first place smooth and impermeable materials are not necessarily those which are most easily rendered aseptic. It is a fallacy to suppose that you render a theatre aseptic by douching its floor with antiseptic solutions I am not sure but that the cleansing of a good old wooden floor is antiseptically as satisfactory as the treatment applied to its modern substitute. In the second place, if the principle be sound on which this change has been made, much more is necessary to carry it to a logical conclusion. The emanations from spectators are more dangerous than those from walls and floor. Must we not, therefore, follow those who have cut the spectators off more or less by an impermeable but transparent screen? The emanations from the operator and his assistants are far more likely to reach the wound than those from spectators. So I picture to myself a time when everyone concerned in an operation—patient, surgeon, and assistants—having been rendered from top to toe cutaneously aseptic, shall cover each natural orifice of the body with an antiseptic mask, and clothing themselves in raiment scientifically pure shall pass into an atmosphere freed from germs by the air pump and by heat. Many years ago we had here a little controversy as to the value of the spray which was then in vogue. Incidentally I convinced myself by experiment and clinical observation that in surgical operations the air was a negligible quantity. If that be so—and if not absolutely true it is very near it—it would be unfortunate that in cases of antiseptic failure the surgeon should be led to seek in unfavourable surroundings for a loophole of escape from self-blame, or to believe that he cannot operate with perfect success save in a glass case or a crystal palace. Our ingenuity need not be directed to the air, which may be trusted to efficient ventilation and the germicide action of the tissues. The skin, the instruments, the apparatus, are the true objects of our care. The other improvement to which I venture to direct your attention is the introduction of electricity into the infirmary. For 30 years I have preached in and out of season the surgical uses of electrolysis, but I feel assured that even now it has not met with the appreciation it deserves. Yet in cirsoid aneurysm no other treatment can be compared with it for a moment. In nævus of the usual mixed variety if you desire to avoid a scar there is nothing so sure and so safe. It does excellently in some other forms of angioma. It gives good results in goitre. It is useful in uterine fibroma. It is an efficient depilatory. Many of these are common diseases which ought to be treated by the ordinary surgeon, and I have hope, now that electricity is being introduced into our infirmaries, that electrolysis will come into greater favour and that the surgeon will have no more hesitation in employing it in suitable cases than in performing lithotomy or amputating a finger.

A discussion was then opened by Mr. BENNETT, Professor of Surgery in Trinity College, Dublin, upon

Injuries of the Elbow-Joint.

He commenced by saying that the subject was exceedingly vast, and therefore he would not attempt to do more than speak on a small portion of it. Our museums and the clinical experience of all surgeons show that errors of diagnosis are frequently made in connexion with fractures of the lower end of the humerus and with displacement backwards of the radius and ulna. There are four reasons for much obscurity in connexion with these injuries. In the first place, the text-books are by no means agreed as to the terms which should be applied to the several parts of the lower end of the humerus; the internal condyle is sometimes spoken of as the internal epicondyle, and sometimes as the epitrochlea, and occasionally the trochlea and its epicondyle are put together and called the internal condyle. A similar confusion exists with respect to the parts on the outer side—namely, the capitellum and the external condyle. With such confusion in the terms employed it was easy to understand that the same name might be employed by two surgeons for two injuries essentially different. Another reason for errors in diagnosis is the very rapid swelling which comes on in these cases, and a surgeon who sees a case only some weeks after an injury may have no difficulty in recognising a mistake in diagnosis made by a surgeon who saw the case a few hours after the accident. A consideration of the difficulties caused by swelling should teach us the doctrine of charity when dealing with the mistakes made by others. A third point in the consideration of these cases is the absence of reference in the standard text-books to incomplete dislocation of both bones backwards. To judge by museum specimens the incomplete variety was even more frequent than the complete form, though of course it is possible that this may be in part due to the easier recognition, and therefore reduction, of most of the complete cases. A fourth cause of confusion is the incompleteness of our knowledge of

the pathological anatomy of the lesions of the lower end of the humerus. In 1869 Professor Smith put to him the question, "Why in compound separation of the lower end of the humerus does not the elbow joint suppurate?" This was in the days before antisepsis. Hutchinson had advised excision of the protruding end of the diaphysis; but observation had shown that as a rule suppuration did not occur in the joint, and experiment had indicated the reason thus: when the lower epiphysis is broken off it carries with it the epiphysial cartilage and also the periosteum of the lower portion of the diaphysis, which is stripped off the bone. In this way the periosteum protects the synovial membrane and the joint is not involved at all, though the end of the diaphysis is often thrust through the skin.

This paper by Professor Bennett was illustrated by a large number of very interesting specimens, both moist and dry, of fractures of the lower end of the humerus and of backward displacement of the radius and ulna.

Dr. ROBERTS (Philadelphia) expressed the opinion that ankylosis of the elbow-joint was always due to incorrect coaptation of the fractured surfaces, and though it was possible that some of the loss of movement might be due to excessive formation of new bone, yet it was by no means a common cause and the other reasons generally given for limitation of movement, such as thickening of the capsule, had practically nothing to do with it. Another proposition he would like to lay down was that it was desirable to preserve the normal angle between the humerus and ulva. The "gun-stock" deformity is probably always due to fracture of the internal condyle. Mere alteration of the angle in itself will not impair the utility of the joint, for this angle varies in healthy subjects, but it has an unpleasant appearance. To get good results it is necessary to fix the fragments firmly, and Dr. Roberts thought that the use of long nails in cases of difficulty was a useful method. They might be driven right through the skin, and then be withdrawn in two or three weeks. He had devised some special steel nails and other instruments for the purpose. In obscure or severe cases an exploratory incision might be required and that was best made in the groove between the biceps and the supinator longus. The best position in which to put up a fracture was the not quite fully extended one, though many used a position of extreme flexion.

Professor CHIENE (Edinburgh) remarked that injuries in the neighbourhood of the elbow-joint could be treated in three positions. 1. The fully extended position was best for severe cases in which it was necessary to keep the patient in bed; if necessary, strapping and a weight and pulley might be used as in the lower limb. 2. The rectangular position was suitable for cases of fracture of the olecranon *without displacement*. 3. In all other fractures the fully flexed position is best; no anterior pad should be used beyond a little lint, and the limb should be fixed to the chest with a layer of lint between. After a week massage might be employed and a little later movements may be attempted.

Mr. BRYANT (London) accepted Professor BENNETT'S explanation of what took place in a separation of the lower epiphysis of the humerus, and as a confirmation of it he mentioned the great thickening of the lower part of the diaphysis in these cases resulting from the deposition of bone between the raised periosteum and the diaphysis. He further remarked that the extended position was by far the best in which to examine injuries about the elbow, as every point of bone could be felt. The extended position, moreover, was frequently the best position in which to put up the limb, at all events at first.

Mr. DALZIEL (Glasgow) mentioned that during the last few years he had seen six cases of stiff elbow, in each of which a fall on the hand had occurred causing a splitting off of the capitellum, which often is rotated so that the articular surface is applied to the lower end of the humerus. Ankylosis may result, or non-union, or the inner fragment will continue to grow while the outer fragment does not grow; and in this way much deformity may result. It is important to bear in mind that this fracture is not a separation of the epiphysis, but a true fracture. It never occurs after puberty. Nailing the separated fragment is the best treatment and has proved successful even seven years after the accident.

Mr. KEETLEY (London) thought that the absence of suppuration in the elbow-joint in the cases of compound separation of the lower epiphysis of the humerus was probably to be explained by the joint having been rapidly shut off by adhesions. He agreed with Dr. Roberts that displaced bone was the chief cause of ankylosis, but he did not approve of using nails; an incision was not rarely required, and then sutures could be employed. He was of opinion that "passive exercise" of injured joints was much overdone.

Mr. JORDAN LLOYD (Birmingham) considered that pure dislocations of the elbow are extremely rare, though fractures in the lower end of the humerus are often mistaken for them. Splitting off of the capitellum is not rarely a result of a fall on the elbow, the olecranon from its shape acting as a wedge. The injury is probably common in children and is often overlooked; it may heal well and cause no loss of mobility of the joint. The most common cause of stiffness of the elbow is excess of passive movement; the joint after a fracture should be kept at rest for from four to six weeks. A crushing up of the olecranon leading to narrowing of the great sigmoid notch might occur from a fall on the elbow and might lead to great difficulty in the reduction of the dislocation which was generally present.

Mr. J. HUTCHINSON, jun. (London), attributed much of the difficulty of diagnosis in cases of injury to the elbow to the fact that frequently the injury is complex, and he presented a skiagraph which showed multiple lesions in the neighbourhood of the joint. He could not agree with Professor Annandale's opinion, as shown by the numerous specimens in the Pathological Museum, that in compound fracture into the joint excision should be done. He thought that we should remove as little as possible in such cases.

Professor BENNETT, in reply, mentioned that he had brought some skiagraphs which demonstrated very clearly the deposit of subperiosteal bone in cases of separation of the lower epiphysis of the humerus to which Mr. Bryant had alluded.

The PRESIDENT summed up the discussion, saying that there were two great difficulties in these fractures about the elbow; firstly it was difficult to put the fragments in position, and secondly, it was difficult to maintain the mobility of the joint. He thought that passive movements should be applied with great care; in the morning the joint might be flexed and in the evening it might be extended. This was all that was needed.

Intestinal Obstruction.

Professor KOCHER (Bern) read a paper on Intestinal Obstruction. It is still only too common, he remarked, to find cases treated by drugs before the surgeon is consulted. He had had 77 cases of intestinal obstruction (excluding cases of disease of the rectum and external hernia); of these, 26 were due to malignant disease of the bowel, and he resected the intestine in 24 of these cases with only 4 deaths. In 19 cases tuberculous masses had produced stricture of the bowel; in 18 of these he operated and only 1 patient died. If the moribund cases and those where no operation was done were excluded there remained 38 cases in which an operation was performed, and in these the mortality was only 18 per cent. It was, however, curious that in the slighter cases, where the ileus might be said to be symptomatic, the mortality was much higher; of 7 cases of volvulus there were 5 deaths. In fact, in the simpler cases the death-rate was 59 per cent. The logical deduction from these statistics is that the great mortality is not due to the operation. The cause of death in most cases was septic absorption from ulcers occurring in the bowel above the obstruction; these ulcers were usually attributed to pressure from fæces, but they occurred even when the fæces were liquid; they were really due to over-distension, which led to impairment of the epithelium. It was necessary to relieve the distension as soon as possible, and this might be done by a small incision, a radical cure being postponed to a later date. Finally he urged that surgeons should be called in to see a case of obstruction before any drug is given, and it was very advisable for the surgeon to have the benefit of a physician's opinion when making the diagnosis.

Œsophagotomy.

Mr. W. THELWALL THOMAS (Liverpool) read a paper on three cases of Œsophagotomy for Swallowed Toothplates. In the first case repeated attempts had been made to dislodge the plate, and though it was easily removed by operation the patient sank and died; in the two other cases, where no forcible attempts to remove the plates with forceps had been made, recovery was rapid, uneventful and complete. Mr. Thomas thought that a metal-ended bougie would be better than the usual gum-elastic probang as being more likely to give an audible "click" when touching the toothplate and

that the cases showed the undesirability of any prolonged attempts at extraction through the mouth.

Hepatectomy.

Mr. MAYO ROBSON (Leeds) read a paper on three cases of Partial Hepatectomy for Cancer. He remarked that out of nearly 300 operations on the liver and bile-tracts, of which number 35 were cases of malignant disease, there were only 3 cases in which he had thought it feasible to attempt removal of a small portion of the liver with the affected gall-bladder and duct. Of these 3, 1 died in a few hours, but the other 2 completely recovered from the operation but died some months later from recurrence. In all the 3 cases he had applied an elastic ligature beyond the growth, keeping it from slipping by knitting needles. The mass having been brought out of the abdomen was cut off. Mr. Mayo Robson remarked that in two cases in which he had closed the abdomen, thinking malignant disease was present, complete and permanent recovery had followed. There were probably cases of inflammatory thickening which disappeared after removal of the cause, and he thought that in doubtful cases an exploratory incision was advisable. In conclusion, he enunciated the following propositions:—1. Seeing that statistics agree in showing the frequent association of gallstones and primary cancer of the gall-bladder and liver, it is desirable that cases of cholelithiasis should be treated surgically at an earlier stage than has hitherto been the custom. 2. In all cases of tumour of the gall-bladder, even if unaccompanied by symptoms, an operation is advisable, and the obstruction, usually a calculus, should be removed. 3. If these rules were followed, probably primary cancer of the gall-bladder and liver would be rarer. 4. If early operation in cases of tumour of the gall-bladder were followed out, then, even if primary cancer had commenced, it would be in an early stage, and a complete recovery by partial hepatectomy might be hoped for. 5. An exploratory operation, even in a patient seriously ill with a localised tumour in the region of the gall-bladder, is worth advocating, as though malignant disease may be feared, the disease may be only inflammatory and therefore capable of relief. 6. If there are any secondary nodules in the liver, or if adjoining viscera are seen to be invaded, the operation had better be no more than exploratory.

Mr. MORTON asked if it were possible to examine the whole liver from the wound.—Mr. ROBSON, in reply, said it was quite possible to examine the whole of the surface of the liver, and in reply to a question from Dr. Roberts he explained that if he thought drainage necessary he used a large rubber tube with gauze inside and he placed it in the "right kidney pouch."

Dr. H. G. RAWDON (Liverpool) read a paper on two successful cases of Enterectomy following strangulated hernia, in which Murphy's buttons were used. In each case many inches of bowel were excised, the button was readily adjusted and recovery was speedy and complete. In one case the button was never found though often looked for.

Perforation of Gastric Ulcers.

Mr. J. P. BUSH (Bristol) gave an account of two cases of Perforation of Gastric Ulcer, in which he performed laparotomy. The operation in the first case was done twenty-six hours after perforation and the patient did well for three weeks and then died suddenly, probably from cardiac syncope. The other case, operated on eighteen hours after perforation, recovered completely. In each case he sponged the peritoneum, but did not wash out.

The PRESIDENT expressed his opinion that sponging might be sufficient in cases treated soon after the perforation, but he thought irrigation was needed for those seen later.

Mr. THOMAS H. MORSE (Norwich) had had four cases and only one died and that one was operated on twenty-four hours after perforation. He thought irrigation was less harmful than sponging.

Dr. W. WHEELER (Dublin) thought that irrigation with a saline solution was the best method of treatment.

Dr. MACLAREN (Carlisle) said that the after treatment of perforated gastric ulcer was still in the experimental stage. He considered the chief conditions of success were the strength of the patient and the thorough cleansing of the peritoneum.

Surgical Treatment of Empyema.

Dr. MENZIES HUTTON (Edinburgh) read a paper on the Treatment of Empyema. He expressed the opinion that, though aspiration might be sufficient in children, incision and drainage was the best treatment at all ages. To enable the lung to expand he had devised a valved drainage tube which permitted air to pass out on coughing or expiration, but prevented its return. Good results had followed its employment, in one case even eight months after the incision. The only condition in which this tube should not be used was when a bronchus opened into the empyema.

Mr. J. H. NICOLL (Glasgow) described his operation for Chronic Enlargement of the Prostate. He removed by means of special forceps through a perineal wound portions of the enlarged gland, without injuring the urethra or bladder, so that the risk of septic absorption was much diminished. During the operation the prostate is pressed down from above by the fingers introduced through a suprapubic cystotomy wound. The results had fully justified the operation, and when the doubtful benefits of castration and vasectomy were considered, he thought the operation was deserving of an extended trial.

OBSTETRICS AND DISEASES OF WOMEN.

WEDNESDAY, JULY 27TH.

The Presidential Address in this Section was delivered by Dr. A. R. SIMPSON, Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh, the subject being

The Teaching of Obstetrics.

Dr. Simpson commenced by mentioning that the chair in the University of Edinburgh was the oldest midwifery chair in existence, history showing that when the Town Council of Edinburgh instituted in 1726 a professorship of midwifery in the University they unwittingly established a precedent. He went on to claim that midwifery, though late in development, had now come to rank with medicine and surgery in importance, while its constancy of recurrence rendered it the most important part of the general practitioner's practice. "I try to get students to believe," said Professor Simpson, "that the successful conduct of confinements is the surest guarantee for speedy success on their entrance on the career of an ordinary practitioner. Coming into a locality a young doctor may get a reputation in the community for managing well an outbreak, say, of typhoid fever or for operating well in some case of injury. But his very triumph over the typhoid has only been complete when he has succeeded in preventing the possibility of its recurrence, and people will not be less careful to protect themselves from injuries though they know they have a skilful surgeon near at hand. But each time it is whispered among the ladies that he is specially skilful in the handling of his confinement cases the rumour of his skill and kindness must fall on the ear of someone who will say to herself: 'My time is coming; I must have him to attend on me.' It is the only gate into general practice that is always open everywhere. Men who have gone through a medical curriculum with the bare modicum of midwifery which may carry them past a final examination have afterwards found themselves in a situation where they might have rendered good service to a suffering fellow creature if they had not been in a hurry to forget what little they had learned. I have heard a gentlemen who had attained to eminence tell how during his student course he had imagined that all he needed earnestly to study was surgery, as he was destined for the Army Medical Service; but, to his horror, he found that the first professional service he was called upon to render on board a troopship was to deliver a soldier's wife, a service in which he was glad to avail himself of the efficient help of a skilful matron who was on board. A practitioner may see a case of diabetes once in two or three years; or he may have a run of cases for a time and then for years fall out of acquaintance with it. So with many other forms of disease; they may come and they may go from the visiting list but the midwifery cases go on for ever. So long as the practitioner has his place by the side of the river of life watching its menstrual ebb and flow and prepared to render efficient aid he will find it float confinements to his charge with the steadiness of the tides. Moreover, there is this to be said in regard to deliveries, that whilst the ordinary run of them are cases of natural labour which may not call for active intervention, at any moment emergencies may arise which will tax to the uttermost the practitioner's resourcefulness and self-reliance. If he has a case of heart or lung or brain disease which leaves him undecided when he sees it first as to what should be the best line of treatment,

he can probably prescribe something that will be useful, or at least not hurtful, until on a second visit the course becomes more clear or until he has had time to read up the subject in a system of medicine. If he cannot at once classify a skin disease, the case will not go wrong whilst he compares it with the plates of some work on dermatology. If he does not feel quite sure what kind of truss to order for a hernia he can politely propose to give the instrument-maker instructions about it and in the interval refresh his memory at some surgical source. In most of the difficulties in ordinary practice the family attendant may even, if he see fit, call in the aid of a consultant. Their combined wisdom may make for the recovery of the patient or, at the worst, give the patient and the friends the comfort of thinking that everything had been done that could be done. But if a man comes to a midwifery case and finds an arm protruding it is too late to think of reading up his Playfair; if at the end of a labour which has gone on smoothly he finds his patient become pale and pulseless he has no time to get assistance. Before help can come the flooding may be fatal. If he is not to see the patient die before his eyes he must recall the measures he has been taught to adopt in this contingency and he must apply them with his own hands immediately. I am persuaded that every member of the Association present will bear me out when I thus intone the prime importance of this department in a doctor's daily round. But as you cast your minds back to your student days how does this predominance of midwifery in your practice look in comparison with the little time devoted to it in your classes? The obstetric teacher among a company of physicians and surgeons is apt to find his subject regarded as a kind of subordinate speciality which may be lectured on at any odd time to senior students whose best hours are all laid out for them in the interests of systematic and clinical medicine and surgery and their subsidiary branches. It has always seemed to me that this is to do an injustice to men whom we profess to send out fully qualified to undertake all the duties of a medical practitioner. It is altogether out of proportion to have them, as they commonly are with us, under the necessity of attending two six-months' courses of systematic surgery and three three-months' courses of clinical surgery, whilst, apart from the gynæcology they learn in connexion with clinical medicine, all the midwifery that is enjoined on them is the six months' systematic course, three months of clinical teaching in the maternity and attendance on six cases of labour. This gives them a false impression of the work which lies before them and implies superfluous attention to surgery or inadequate instruction in midwifery. I would not have the surgical discipline diminished, but, surely, men should not be sent out to practise their midwifery with only half the training which they have enjoyed for their surgery. A fifth year was added just a lustrum ago to the medical curriculum. It was understood to have been added in the interest of the practical subjects of study, but I protest that, in Edinburgh at least, the student has lost rather than gained in his opportunities of qualifying as an accoucheur in consequence of the changes which have been made for the more prolonged curriculum. Examinations in some of the scientific subjects are such that many men find themselves compelled to take two systematic courses as well as the compulsory practical course to enable them to pass, so that not only the first three years are swallowed up, but generally the fourth as well, before they can at all face the subjects of their final examination and then the time that remains is so largely claimed for medicine and surgery that midwifery runs the risk of being driven to the wall. It has sometimes been suggested that a greater security for proficiency in midwifery would be given by making it compulsory on candidates for diplomas to have attended a larger number of cases during their curriculum than has hitherto been required of them. This, I am convinced, is a mistake. The attendance on a case of labour is not like a visit to a dispensary patient. It cannot be done in the course of an afternoon walk. It means the occupation of hours—it may be of a whole day or a whole night. And the young fellow, already overburdened with work, is to spend these hours or days or nights twenty times over in the slums! No; it is not fair. And it is futile. What guarantee does a man's attendance on a score of confinements give of his knowledge of practical midwifery or of his fitness to deal with difficult cases? There may have been some tedious labours among those he witnessed. He may even have had the exceptional luck to see forceps applied. He counted himself most fortunate when he arrived just in time to see the infant washed; or he became a hero because he lighted on a cross-birth where he sent for the house-surgeon to turn, and the house-surgeon had to send for the physician to decapitate. But all that does not make him fit to cope with the first complication that may meet him in his own practice afterwards. What is needed is that arrangements should be made for the student to have a full winter course of systematic study of midwifery after his intellect has undergone the discipline of the earlier scientific subjects and his mind is free from the incubus of the examinations which followed. His teacher should have the opportunity of fully expounding to him the many dangers and difficulties which he must be prepared to encounter and of explaining to him the methods by which these may be most successfully combated. In connexion with this course he will be drilled in the use of the various obstetric and gynæcological instruments and appliances, and especially he will be practised in the application of forceps and in the operation of version on the phantom. Phantom courses should be regarded as an essential part of the student's training. Practical gynæcology ought to constitute a part of his clinical medical discipline and an element in his clinical examination. As for the practice of midwifery, in addition to the attendance under superintendence of a qualified practitioner on a limited series of cases—of which he should present a detailed record—he ought to attend the cliniques in a maternity hospital."

STATE MEDICINE.

WEDNESDAY, JULY 27TH.

Sir HENRY LITTLEJOHN, in opening this Section, complimented the members on the presence for the first time of ladies. In the 1875 meeting of the Association as medical officer of health he was dealing with the housing of the working classes. A special Act was afterwards passed and £560,000 were expended in carrying out its provisions. In three or four years there was a marked influence on the death-rate—many of the town councillors expected an immediate fall in the rate. The mortality had fallen from 28 per 1000 to 17 per 1000 for the last five years. Those figures represented the total mortality and to that extent involved a fallacy. Edinburgh has its plague spots, such as, for example, the Cowgate and the Grass-market, where the rate touched 30 and 33 per 1000. Another great subject before the meeting in 1875 was the question of drainage. By reference to maps the growth of Edinburgh was demonstrated from 1620 to the present day. In 1875 the Water of Leith was nothing more or less than an open sewer. Parliament, however, compelled the town to carry out the sewage and discharge it into the Forth. The effluent pipe was made too small, and only within the last five years had a pipe of sufficient size been inserted to carry off sewage and storm-water. At the same time the refuse of paper and other factories was diverted along with the drainage of sundry villages. Fish now flourished in the Water of Leith and the question of drainage was satisfactorily settled so far as the New Town was concerned. The drainage of the south side of the town was diverted from the Powburn and discharged into the Craigentinny irrigation meadows, the rental of which is now £18 per acre, and was formerly £40. In 1875 an interesting addition to the water-supply was in contemplation. The Pentland Hills watershed was drained and a fresh supply was sought from the Lammermoors. To keep up the supply of 38 gallons per head Edinburgh had to go to still other watersheds and a stream, the Talla, had been impounded. A population of 296,000 was supplied nominally, but really it included some 400,000 in all. The Edinburgh system of sewage removal began under difficulties. When many years ago he took the late Dr. Parkes into some of the old tall houses of the town he said he would call them "not houses but upright streets." The system of ashes and refuse removal was in full force in Edinburgh and the inhabitants had been educated up to it in this respect. In 1875 *2s. 9d.* per ton were given by the farmers for solid refuse; now the farmers would not take it at any price. The introduction of water-carriage deprived the refuse of its manurial value; now they had built a destructor. In 1875 there was no Notification Act, but the Act was soon afterwards introduced; at that time the proposal was almost universally opposed by medical men, including the Royal Colleges. It passed, however, in the hurry of an

omnibus Bill. In one year near that period 6000 cases of typhus fever occurred and many medical students and men died from the disease. Now that disease had been practically wiped out by the clearing away of rookeries and by notification. Sporadic cases occurred, but the disease was now as fatal and virulent to this day as ever in Edinburgh. The infectious hospital was located in the old High School, a place of classical association. The hospital was fixed in the poorest site in Edinburgh, but there was no spread in the *entourage*. Small-pox was not treated there, but he (Sir Henry Littlejohn) did not believe that aerial spread of that disease took place, at any rate to any extent, with ordinary care.

Rivers Pollution.

An interesting debate on this subject was then opened by Dr. M'LEAN WILSON, in which Professor GLAISTER, Dr. BRUCE LOW, and Dr. J. C. MCVAIL, among others, took part.

PSYCHOLOGY.

WEDNESDAY, JULY 27TH.

The proceedings in this Section were opened by the President, Dr. T. S. CLOUSTON, physician-superintendent, Royal Edinburgh Asylum and lecturer on mental diseases in the Edinburgh University, who took as his theme

The Neuroses and Psychoses of Decadence.

In 1890, he said, I directed attention to that series of nerve disturbances and diseases occurring early in life which might properly be grouped together under the heading of "The Neuroses of Development." To-day I desire to make a few suggestions which will point to another series in which would be included a considerable number of the nervous and mental diseases and disturbances which occur in the later periods of life, and which might, I think, be properly grouped as "The Neuroses and Psychoses of Decadence." The one series all have as their chief and often their only cause faulty development of nerve centres; the other series have as their predisposing cause unphysiological decadence of brain and nerve. In the former series a neurotic heredity is always present; in the latter it is not necessary. In the former series there need not necessarily exist any exciting or proximate cause; in the latter such exciting causes as toxic agencies in the form of syphilis or alcohol, the effects of hard work or unphysiological conditions on the brain extending over many years, worry or strain, the access of the climacteric or senility are commonly present. In the former class the strain of taking up new functions, especially the all-dominating one of sex and of the reproduction of the species, has upset or arrested nervous development from an inherent weakness of power to produce a sound, strong fabric of nerve centres; in the latter the breakdown is not due only to the cessation of reproductive energy, but commonly to want of staying power of the centres to do the work imposed on them or the want of resistive power against undue strains or poisons. The most of developmental neuroses may in one way be looked on as Nature's effort to stop a bad stock before it reaches the time to reproduce itself. Man's normal, average life may be divided into three periods of twenty-five years each. During the first quarter of a century his body is growing and his functions are maturing, the last organ to attain physiological perfection being the brain cortex. During the next period the fullest muscular action, the highest resistive power against disease, and the most reliable and intense mentalisation are found. During the last period a slow process of retrogression and decay sets in and goes on till the physiological ending of death is reached. As during development one organ or function may lag behind its normal maturation time in reaching perfection thus constituting a neurosis from unrelational development, so during decadence every physician and every alienist has had experience of a premature decay in individual organs and functions, constituting a neurosis through unrelational decadence. One man's trophic energy fails at fifty-five, and he then loses 3st. of flesh and falls a victim to the first severe bronchial catarrh that attacks him. The cardiac innervation of another fails at sixty and influenza cuts him off. The memory of another quite gives way at sixty-six, while another loses originating volitional power at seventy, so that he cannot then manage the simplest business. Then the cessation or slackening down of the great reproductive energy at the climacteric period in both sexes is attended by such frequent nervous and mental disturbances that in their lesser degrees they are commonly regarded as rather normal than abnormal in their character. There are low forms of animal life which terminate their existence with reproduction. Continuation of the species with them is death to the individual. There is no intermediate sexless barren zone between fecundity and death, as in man and most of the higher animals. A period of slower ebbing of life—of decadence in fact—in the latter takes the place of the absolute termination of existence of the former, but the whole barren period becomes subject to many diseases and defects that are incidental to this period. The last epoch of all, that of vascular disease and imperfect blood-supply, and demonstrable nerve cell and fibre degeneration, is one necessarily attended by many neuroses and psychoses. Then it is that senile endarteritis, fatty vessels, atrophies, apoplexies, softenings, senile dementia, with irritative mechanical states superadded, come on. It is the time, too, for the more partial breakdown of muscular weakness and incoördination, senile amnesia, senile irritability, senile paralysis of family and natural affections, and senile immoralities. Though bad heredity does not come in so powerfully in decadence as during development it does operate in some cases and thereby brings on decadence or disease before their time. A glance at the general statistics of the neuroses and the ages at which they prove fatal conveys some idea of how they are related to the periods of development and decadence. Taking the report of the Registrar-General for Scotland for 1895 we find that there are 55 per cent. of the population living between one year and twenty-five years, both inclusive—that is, during brain growth and development. The number of deaths from diseases of the nervous system during this period amounted to 3262 out of the total of 9307, or 35 per cent. At the next period, that of full strength, from twenty-six to fifty years, the proportion of the population alive was 30 per cent., while the proportion of deaths from the neuroses sank to 12·2 per cent. In the next period, when decadence has begun, from fifty-one to seventy-five years, the proportion alive was only 12 per cent., while the proportion of the fatal neuroses rose to 33·2 per cent.; and the last period, from seventy-six to one hundred years, that of marked senility, showed only 3 per cent. of the population alive, while 14·8 per cent. of the deaths from neuroses occurred then. The conclusions from this comparison of figures are that the neuroses prevail largely in the period of brain growth and development of function (the detailed statistics for each year show that the first two years are very deadly neurotic years), that the very best years of life are very free from them, and that decadence brings them on with a rush to a far more deadly degree than even during development, senility being the most deadly neurotic period of all. The functional nervous explosions of convulsions are the most deadly of the developmental neuroses; the organic vascular-neurotic destructive lesions of apoplexies and brain softenings kill most frequently after fifty years. Looking to the prevalence of the insanities of development and those of decadence I find that about 12 per cent. of the whole number of new cases occurring each year may be put down to development, not including idiocy and congenital imbecility. If these are included bad brain growth and development account for about 40 per cent. of the whole existing insanity and weak-mindedness in the country. On the other hand, decadence (climacteric, senile, and paralytic insanities) accounts for about 20 per cent. of the insanity and 5 per cent. of the combined insanity and idiocy of the country. At least our statistics at the Royal Edinburgh Asylum over twenty years give these results. We shall not be able to put on a really scientific basis the diseases of decadence until we know the exact steps in the normal process of decay of structure and function in every tissue and organ. The great regulative action of the higher cortex on the nutrition of all tissues and on the function of all organs undergoes a steady deterioration as age advances. The whole body shrinks in volume, except the less organised fat cells in some cases. No doubt it is owing to this fact that there is a less general resistive power in the organism to certain diseases from within and from without. Rheumatism and gout become chronic, bronchitis kills off its victims after sixty years by the 100,000, and neoplasms then become more numerous. The enemies of the tissues and of the organism get too strong for them. During all this process of decadence of the higher nerve centres it is not surprising that diseases and disorders special to the period should appear—namely, the true psychoses and neuroses of

decadence. The different ways in which a decadence affects the resistive quality of the brain and spinal cord against nerve toxins is, I think, best illustrated by studying a number of alcoholic cases past the prime of life and correlating their symptoms—mental and bodily—with their ages, their heredity, their occupations, and their habits in youth. We have all had experience of the immense variety in the alcoholic neuroses and psychoses in different cases according to whether the patient was in mid-life or beyond fifty years. The most common case is that in which a man has taken alcoholic stimulants freely but not to manifest excess from his youth and they have had no appreciable mental or bodily effects till he reaches the age of forty-five or fifty years, when all at once, within two or three years, his eye and face get bleary, his hair gets grey, his hand gets shaky, his memory and acuteness of mind fail, his force of character lessens, his morals deteriorate, his weight either goes up by the deposition of useless fat or drops a stone or two through lack of trophic energy, his walk changes so that he no longer has a firm "grip of the ground," and he looks twenty years older in these two years. What has happened? The chief thing, I think, has been that his nerve centres—mental, motor, and trophic—have suddenly lost their resistive power against the alcohol, and its full toxic effects on their functions have thus become apparent, and this because commencing decadence has begun and altered the quality, structure, and energising of his neurons. A parallel series of clinical facts can be observed in regard to syphilis and lead poisoning. We have three chief types of nervous and mental lesion connected with decadence. The first consists chiefly and primarily of a vaso-trophic degeneration, through which the cerebral vessels first lose their elasticity and then gradually their walls take on various trophic changes and degenerations generally or in patches, when in the course of their constant expansions and contractions as more or less blood is called for by the neurine, they can no longer sustain the blood-pressure and they burst. This is the cause of the vast mass of the destructive brain lesions, the softenings, the apoplexies, which bulk largest as the causes of death in the registrar's returns. No doubt the chief degenerations of the vascular coats are the atheromatous, the inflammatory (senile endarteritis), and the hyaline. It cannot be doubted that the brain tissues regulate by innumerable vaso-motor centres their own blood-supply and there can be as little doubt that the nutrition of their walls is also regulated from centres in the brain. No doubt in most cases of apoplexies from vascular disease we have also some amount of surrounding nerve degeneration. There is a solidarity throughout the whole brain, through which a tissue change seldom occurs in one organ, or system, or centre, or envelope without some amount of pathological change in some or most of the others. The second typical lesion of decadence seems to me to be best represented by those degenerations of the motor and sometimes sensory systems which constitute the ataxies, the scleroses, and the other progressive degenerations. The third typical series is constituted by the mental disturbances and diseases grouped under the climacteric and senile insanities. In them undoubtedly the primary lesions begin in the mental tissues and mental areas.

PATHOLOGY.

WEDNESDAY, JULY 27TH.

Professor GREENFIELD, the President, having said a few words of welcome to those attending the proceedings of this Section, Dr. ROBERT MUIR opened a discussion upon

The Nature and Significance of Leucocytosis.

After referring to the importance of the subject and its wide range, he said that he would confine his remarks to leucocytosis as a process in general pathology and more particularly to the fundamental changes on which the excess of leucocytes depends. A general leucocytosis may occur in many acute inflammatory conditions, especially if suppurative; and experimental leucocytosis may be produced by the injection of various substances, especially bacterial products. There can be little doubt that in such cases there is an actual increase in the total number of leucocytes, not simply an accumulation in the peripheral vessels. This view is supported by the observations of Goldscheider, Jacob, and many others, and also by the fact that in conditions of suppuration there is an enormous emigration of leucocytes, so that several ounces of pus may be discharged daily while the number in the blood continues in excess. Where there is such a continuous drain and at the same time an excess in the blood the production of leucocytes must necessarily be greatly increased. The sites of origin of the different varieties of leucocytes is a point on which sufficient stress has not been laid. First, leucocytes multiply by mitotic division in adenoid tissues, lymphatic glands, Malpighian patches of spleen, &c. These leucocytes are small spherical cells with a relatively large nucleus and scanty hyaline protoplasm. Secondly, leucocytes undergo division by mitosis in the bone-marrow. The great majority of the cells dividing these are of somewhat larger size and their protoplasm contains fine granules which have an oxyphile or neutrophile reaction. Eosinophile cells also multiply in the marrow, but they are fewer in number and their division is less active than the former variety. Now, in the blood there are no cells with a simply spherical or oval nucleus and finely granular protoplasm like the finely granular cells in the marrow. Further examination of the marrow shows that these cells present great variation in the configuration of the nucleus, that, in fact, one can trace all the intermediate stages from the simple rounded or oval nucleus through various degrees of lobulation to the markedly multipartite nucleus and the finely granular, actively amœboid leucocytes. According to this view these cells, after division in the marrow, undergo a change in the nucleus which specially adapts them for amœboid movement, and in this fully-formed condition they enter the blood. If the above conclusion is justified, then important changes should be found in the marrow when there is a constant drain on this variety of cell. A considerable number of experiments were undertaken with this object in view. Artificial leucocytosis, or at least a removal of leucocytes from the blood, was produced by subcutaneous or intraperitoneal injections of organisms, chiefly staphylococci. The experiments lasted for various periods of time up to four and a half weeks. Striking changes were found in the marrow. The fat cells become absorbed and the cellular elements undergo a corresponding hyperplasia. The cellular increase is due to excessive production of the finely-granular leucoblasts which are the source of the finely-granular leucocytes of the blood. The coarsely-granular eosinophile cells are relatively, and it may be absolutely, diminished. Erythroblasts or nucleated red corpuscles are also much diminished. The giant cells undergo degenerative changes and in great part disappear. This leucoblastic type of marrow corresponds to the erythroblastic type which is found after hæmorrhage. This fact appears to be of great importance, for in any case of suppuration there are (1) locally an enormous number of finely granular leucocytes (pus corpuscles); (2) in the blood a great increase in number of the same cells; and (3) in the marrow a great increase in the cells from which these leucocytes are derived. Further, it is very probable that the same cause will explain all these phenomena. Bacterial products act as chemiotactic substances, and if in small quantity may produce only local suppuration without leucocytosis. If, however, the suppuration be more extensive, then these substances which produce chemiotaxis are absorbed in such quantities as to act on the leucocytes lying at the periphery of the blood-channels in the bone-marrow and so produce a general leucocytosis. The increase in the number of finely granular leucoblasts is probably due to a direct stimulating effect which these substances exert on them. This view very closely corresponds with that which Ehrlich has adopted in his latest publication, but these conclusions were reached quite independently and the changes in the bone-marrow have not previously been described. Dr. Muir then showed an interesting series of lantern slides from photo-micrographs in illustration of his experimental work in leucocytosis.

Professor GREENFIELD congratulated Dr. Muir on his able exposition of the subject and said that his results threw enormous light on the pathology of leucocytosis.

Professor HAMILTON said that in his opinion many cases of leucocytosis were not due to a general increase of leucocytes but merely to an accumulation in the peripheral vessels. As regards the cause of a general leucocytosis, granted that it did occur—e.g., from injection of various substances or organisms—he said that the usual explanation was the theory of chemiotaxis. He deprecated any dogmatic statement on such questions and suggested as a possible explanation that bacterial poisons stimulated the lymphatic glands to throw off

more leucocytes just as certain drugs stimulate the liver to increased secretion. He then discussed the phagocytic action of leucocytes.

Dr. EDMONSTON CHARLES (Rome), said that in Malta fever he had found that the polymorphonuclear leucocytes were quite absent from the blood, and only lymphocytes were present. In other fevers, on the contrary, there was no such absence of the polymorphonuclear cells. The great importance of this to the physician was due to the fact that it afforded him a rapid method of diagnosis between typhoid fever and Malta fever. The sedimentation and agglutinative tests were of great value, but could not be undertaken by the ordinary physician. In further illustration of the importance of clinical examination of blood-films he said that in appendicitis the date at which a patient might get up could be told with almost absolute precision. If leucocytosis was present, then the patient should on no account rise even in the absence of all other symptoms; but if the leucocytosis had subsided, then, even in the presence of other symptoms, the patient might get up. He concluded by quoting a case in which the observation of a polymorphonuclear leucocytosis had enabled him to predict the onset of an acute pleurisy twenty-four hours before the physical signs appeared.

Dr. WOODHEAD agreed with Professor Hamilton that theories can at present serve only as working hypotheses, but he thought that Dr. Muir's paper would be of great assistance in forming definite conclusions on this subject. The great importance of his paper lay in the fact that two sets of cells were localised: (1) a series of changes in lymphatic glands and their effects on the blood; and (2) a series of changes in the bone-marrow and their effects. The theory of chemiotaxis might now be more accurately studied when the sites from which the various cells came had been more precisely localised. Similarly, phagocytosis could be more satisfactorily investigated, since the irritant could be applied at special sites.

Dr. LAZARUS BARLOW contrasted the present state of knowledge of granular-celled leucocytosis with that of non-granular-celled leucocytosis, and maintained that the former was the more advanced. He regarded granular-celled leucocytosis as a process of the same nature as that which leads to the appearance of granular cells at the site of an inflammation. The question of non-granular-celled leucocytosis was much more difficult, chiefly because of the uncertainty which prevailed concerning the nature of the cells involved. Lymphocytosis probably depended simply on a washing out of the adenoid tissues during digestion, but where there was an increase of the large hyaline cells then it was uncertain whether they were enlarged lymphocytes or endothelial cells, or fibroblasts, or even cells of a lymphosarcoma.

Dr. DURHAM said that the bone-marrow was a tissue comparatively neglected, and strongly urged its routine examination in all organismal conditions. In some cases of bacterial infection—e.g., in Malta fever—he had found the organisms present in the marrow though all the other organs and tissues were sterile. He also discussed the resolution of artificial leucocytosis when the number of lymphocytes in the blood is in excess of the normal. He had never seen any transitional forms between the polymorphonuclear leucocyte and the lymphocyte, and suggested that the latter was probably more sluggish in disappearing. He concluded by emphasising the extreme rapidity with which these changes occurred in the blood and in all the cavities of the body after experimental leucocytosis, and said that these were consistent with the changes in the leucoblastic bone-marrow which Dr. Muir had described.

Dr. MILROY said that in the experimental leucocytosis caused by the injection of nucleic acid there was an alteration in the ratio between the amounts of nitrogen and P_2O_5 excreted compared with that in health. There was, indeed, both an absolute and a relative increase of the excretion of P_2O_5. On the other hand, in medullary leucocythemia the excretion of P_2O_5 was both absolutely and relatively diminished as compared with the nitrogen and he suggested that this fact seemed to imply some check in the normal disintegration of the leucocytes.

Dr. COPEMAN and Dr. GRÜNBAUM also spoke.

PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, JULY 27TH.

The President of this Section, Dr. J. O. AFFLECK, Lecturer on the Practice of Physic and on Clinical Medicine in the Edinburgh Medical School and Physician to the Edinburgh Royal Infirmary, opened the proceedings of the Section by delivering the short Presidential Address which follows entitled—

The Progress of Therapeutics.

The subjects included in this Section can never cease to be of interest to those engaged in the practice of medicine or fail to occupy a prominent position in the business of a congress like this. However widely diverse the topics dealt with in our proceedings here there may be traced through them all a certain unity of purpose and a common object towards which they converge—the treatment of the sick and suffering. Doubtless many points relating to treatment in individual diseases are fully discussed in other sections, but it seems nevertheless an advantage that there should be a department in which therapeutics and our therapeutic resources are specially considered, and towards which some will naturally turn in the hope of gaining or of imparting information. The conjunction of the two subjects of pharmacology and therapeutics necessarily makes the field in this Section a wide one; but it has the obvious advantage of bringing into contact for discussion those specially skilled in the knowledge of the composition, properties, and actions of medicinal agents and those whose main duty lies in practically applying these in the daily work of their profession. Having myself more in common with the latter category, I do not propose in this brief address to dwell upon any subject in the domain of pharmacology, even had time or ability admitted of my doing so. During the twenty-three years which have elapsed since the last meeting of the Association in Edinburgh the number of new remedies has been multiplied enormously, chiefly by the adoption as therapeutic agents of substances which organic chemistry has so richly provided, the virtues of many of which are beyond all doubt. An illustrative instance might be cited in the power of salicin and salicylic acid and its compounds to lessen the pain, and in many cases to shorten the attacks, of acute rheumatism. The groups, too, of synthetic analgesics, antipyretics, and antiseptics have furnished us with substances which (while requiring at all times care and judgment in their selection and administration) are among the most widely employed and efficacious of the resources for treatment placed in the physician's power. Conspicuous among the therapeutic advances during the period have been the large number of remedial measures which lie outside of the materia medica and which—many of them at least—are eminently rational in their conception and application. The developments of pathology and more accurate clinical methods have contributed in no small degree to bring about this result. A therapeutic measure of immense value is the method of treating stomach disorders by lavage, a plan which owes its origin to Professor Kussmaul, who originally designed it for use in dilatation of the stomach, but which has since been extended to the treatment of many other painful conditions of digestion to which it can oftentimes bring marked relief. A better acquaintance with the processes of the gastric chemistry, too, has been turned to useful account in the various methods of peptonising foods in cases of dyspepsia. An entirely new field of therapeutics has been opened up by antiseptic surgery, and some of the most formidable and fatal of all maladies which were at one time regarded as outside the reach of remedies have been made possible of cure. This has been especially the case as regards the abdominal cavity, where the wall of partition which divided medicine and surgery has been broken down and conditions of disease formerly believed to be hopeless are now successfully dealt with by surgical operation. The gynæcologists led the way in this direction. Many cases of acute peritonitis which thirty years ago were treated only by opium are now explored surgically, and, whether due to the perforation of a viscus, disease of the appendix vermiformis, or acute intestinal obstruction, are cured by the timely intervention of the surgeon. Excision of the kidney and operations upon the liver, the stomach, and the intestines are now common occurrences, and many a life is preserved and much suffering spared by these modern methods of treatment. Indeed, it sometimes happens that cases which on exploration were found to be beyond the reach of radical treatment may yet by this very operation be materially benefited as regards some of their distressing symptoms. The surgery of the brain, at one time deemed a practical impossibility, has yielded, especially in the hands of Professor Macewen, results which have arrested the attention of the whole world of medicine.

The employment of massage as a therapeutic agent has been found to be a valuable adjuvant in the treatment of various forms of paralysis, particularly those of peripheral origin; in many functional disorders of the nervous system; in the disabling sequelæ of rheumatism; in certain varieties of dyspepsia; in insomnia; and in the debility of convalescence. The amount of aid to be obtained from electricity as a therapeutic measure is not to be gauged by the comparatively limited extent of the results hitherto obtained by its use. Its more recent developments seem to promise for it a wider sphere of useful action as a means of treatment. The employment of various forms of baths in the treatment of disease has until recent times held a much less prominent position in this country than on the continent. But their value is now gaining much wider and more practical recognition. The application of regulated exercises in the treatment of heart disease by the Oertel system or by the more recent Nauheim method has been found to yield excellent results in many conditions of cardiac enfeeblement with or without valvular disease. Nevertheless the range of applicability of this form of treatment is probably less extensive than some of its more strenuous advocates contend, and at all events much care and discrimination are called for in the selection of presumably suitable cases and vigilance in observing the effects lest harm result. The open-air treatment of phthisis in specially constructed sanatoria has recently awakened widespread interest. This method, which seems to rest upon a scientific and rational basis, is still but upon its trial, yet results of an encouraging kind have already been obtained. Of no less importance, and with a still wider range of beneficent result, are the means which bacteriological investigation has placed within our power of identifying specific organisms in infectious diseases and observing their life-history and toxic properties. The way has thus been opened for the scientific study of immunity, and this again has resulted in the discovery of protective and curative antitoxins, of which that of diphtheria is the most outstanding example. The testimony which has been borne to the value of this treatment in that dreaded malady has been universal. Others of the deadly scourges of humanity are now also being effectively combated by serum therapeutics. For this work we are indebted to the Pasteur Institute, where also the anti-rabic treatment of hydrophobia was discovered by its famous founder. It would be impossible in any sketch of therapeutic advance to omit a reference to the growth and development of the modern system of nursing the sick. The work of setting apart properly equipped women as nurses, with which the name of Miss Nightingale will ever remain associated, has had the effect of revolutionising to a large extent hospital treatment, has incalculably contributed to the relief and comfort of sufferers, and has lightened the labours and anxieties of medical men. Outside of hospitals, throughout all classes of the community the benefit has been no less conspicuous. The beneficent work of nurses is universally recognised and appreciated by the public and is happily now made available for the poorest of the poor.

OPHTHALMOLOGY.

WEDNESDAY, JULY 27TH.

Dr. ARGYLL ROBERTSON, the President of this Section, in opening the proceedings of the Section, began by thanking the members for the honour they had conferred upon him by electing him President, and expressed the wish that it would be a most profitable meeting, and said that he would do all that lay in his power to make it such. He briefly touched on some of the more important advances that had been made in ophthalmology during the past year, the intra-oculous injections in various forms of septic conditions, and the treatment of corneal opacities. He also pointed out that further investigation was required in the treatment of glaucoma and detachment of the retina. The department of ophthalmology had developed in importance with great rapidity during the past 40 years; at that time there were only two ophthalmic surgeons in Scotland as compared with the large number that abound at the present time. This is largely due to the necessity of the correct treatment of refractive errors. Such things as cylindrical lenses were unknown in those days, but as a result of the labours of men such as Donders, Snellen, and others the state of affairs has very much altered. He then referred to the subject of examinations in ophthalmology for final students. He stated that a great deal had already been done, especially in Dublin, but still a more thorough examination should be insisted upon. The President then closed his remarks by thanking those distinguished men who had come great distances to read papers at the meeting and honour the Association with their presence.

The PRESIDENT then called upon Professor Nuel to give his paper on

Absorption of Aqueous Humour by the Iris, with Specimens and Lantern Demonstration.

Professor NUEL (Liège) commenced his remarks by stating that he had experimented on rabbits, cats, and dogs, and with the aid of microscopical sections illustrated his theory of absorption. Indian ink solution was introduced into the anterior chamber and the effect watched by making section of the iris and ciliary body some hours afterwards. He found that the lymph-channels in the iris of the rabbit are rudimentary, whereas those in the cat and dog are well developed, especially towards the peripheral zone of the iris, those near the pupil being smaller and further apart. When a solution of Indian ink is introduced into the anterior chamber these channels take up the black pigment which is easily demonstrated by microscopical sections. In a few days the pupil becomes dilated and obliterates these lymph-channels. The presence of Indian ink sets up an inflammatory reaction in the iris which extends to the ciliary body. In successful cases this Indian ink penetrates as far as the blood-vessels in the course of six or eight hours; it also extends towards the pupil, accompanied by a deposit of a large number of migratory cells. In one case of a dog a section was shown where the pupil had not dilated and the Indian ink was well marked along the line of the blood-vessels. With a *résumé* of these cases Professor Nuel concluded his remarks.

Mr. GEORGE BERRY asked whether Professor NUEL was of the opinion that extensive absorption took place in the iris? He pointed out that in septic cases as a result of injury absorption takes place from the anterior surface of the iris more than from the canal of Schlemm and the angle of the iris. In reply Professor NUEL stated that it was his opinion that absorption took place more on the anterior surface of the iris than from the other parts mentioned.

Dr. THOMAS REID then gave a lantern demonstration illustrating the reparative processes in the cornea. The specimens shown were the result of many years' investigation on the reaction of the cornea after severe stimulation. The first case showed the edges of the wound in the cornea turned in with complete union of the epithelium over them. The next case showed the epithelium extending over the prolapsed iris in the course of 24 hours after the accident. The next was one of gunshot wound 24 hours after the accident showing total destruction and failure of the epithelium to bridge the rent. Another case demonstrated a rupture of the cornea with ragged edges with the epithelium extending over the corneal tissue; on the third day after the accident in this case the columnar cells were more active than they are usually supposed to be. Several cases were then shown illustrating the appearances of lacerated wounds in the cornea. Other cases were shown, one demonstrating union in a more or less perfect state 15 days after the injury, with a proliferation going on to form corneal tissue. He then showed cases of superficial lacerated wounds with the epithelium extending down into the cavity within a week after the accident.

Dr. GEORGE MACKAY and Dr. J. C. DUNLOP related a case of

Acquired Complete Colour-blindness

(with specimen). The case was read by Dr. Dunlop. The patient suffered from cancer of the stomach. He suddenly lost the colour sense; every colour appeared as grey; there was no word-blindness or loss of the former sense. The vision was $\frac{6}{12}$ and the intellect was clear. He died on April 22nd as a result of cancer of the pylorus. The brain was removed and placed in formalin. The right occipital lobe was considerably reduced in size; there was a distinct atrophic lesion in the posterior part of the fourth temporal convolution on the right side. On the left side there appeared to the naked eye no lesion whatever. However, on making a section of the left lobe there was found another atrophic lesion deeper down in the corresponding convolution. The optic nerves were found to be quite healthy. The lesion did not extend to the calcarine fissure. On microscopical examination the adventitia of the vessel was

considerably increased in amount, especially in the small vessels; in some of the small arterioles it was markedly increased. In some of the very small arterioles the media had become separated from the adventitia by a clear fluid. The microscopic preparations were made by Dr. Robertson, Pathologist to Morningside Asylum.

The PRESIDENT remarked that they were very much indebted to Dr. George Mackay and Dr. Dunlop for their interesting paper, as the subject was of great interest and a considerable amount of diversity of opinion existed with regard to the localisation of the colour centre in the brain.

Mr. GEORGE BERRY pointed out that although there was defect of the colour sense, the lesion did not limit the colour centre to that particular spot.

The PRESIDENT stated that he was of opinion that there were two distinct centres in the brain, one for colour sensation and another for the form sense.

Dr. GEORGE MACKAY, in reply, remarked that in cases of congenital colour-blindness the form was intact, which pointed to the presence of two distinct centres.

X Rays in Ophthalmology.

Mr. MACKENZIE DAVIDSON gave a demonstration of x rays and ophthalmology. He has applied the x rays to foreign bodies in the eye in 41 cases. The principle of the method is based on getting the three coördinates of any point. The instrument consists of a headpiece with a frame fitted with two knitting needles at right angles to one another, these form two planes and the sensitive plate forms the third plane. The head is then firmly fixed and the eye is directed to a point parallel to the horizontal knitting needle. The tube is placed exactly opposite the vertical needle and then a photograph is taken in that position. The tube is then moved 6 centimetres to one side or another, and then another photograph is taken in this position. By using these two films a stereoscopic effect is produced. The negatives are taken and developed and a piece of celluloid is placed over the wet plate and the position of the foreign body noted. The same is done with the second negative, the difference between these two points being recorded. The known point is located by an ingenious arrangement of silk threads and compasses, and by this means the exact position of the foreign body is estimated. To get accurate results by this method it is necessary to use tubes which form x rays which come from a very fine point, and also which require short exposures, about 90 seconds being the usual time required. Several lantern slides were exhibited illustrating many cases which he had had under his observation.

Mr. E. TREACHER COLLINS presented several cases in which skiagraphy was effective for detection of foreign bodies. The first case, that of a man four months after injury, showed a dark spot on the iris, and Mr. Davidson, by means of the x rays, located a foreign body behind the scar. The foreign body was removed, and excellent vision resulted. The second case described was that in which a piece of steel had penetrated the vitreous, located by Mr. Davidson by means of the x rays. It was removed by Mr. Collins, with a good result. The third case was one of iritis, and there was considerable doubt whether there was a foreign body present or not. It was, however, detected by Mr. Davidson in the iris, it having been in the eye for 14 years without causing irritation. The fourth case was that of a very small particle of flint in the lens, the measurement of which was barely 1 mm. in diameter. In conclusion, Mr. Collins mentioned that the method accurately locates the foreign body, also the size of the body, and whether there is one or more.

THE ANNUAL MUSEUM.

The Drill Hall in Forrest-road, the entrance to which is almost immediately opposite the reception room, afforded ample space for the display of new drugs, instruments, surgical and sanitary appliances, and other things of interest to the profession which annually form the nucleus of the museum. The exhibitors must have been encouraged by the very great interest which the visitors evidently took in the proceedings. From the point of view of merit the exhibits compared favourably with previous events: very good taste had been exercised in the arrangement of the stalls and the stalls themselves presented a very pleasing appearance. Pharmacy affords a wealth of material for the purposes of display, while the line of exhibits was now and then agreeably relieved by the products of other arts and industries, food preparations, mineral waters, scientific apparatus, illustrated periodicals, &c. The management very wisely had not overlooked the importance of allowing plenty of space between the rows of stalls so that the visitors could move freely up and down without uncomfortable jostling, and even when little groups collected round an object of particular interest there was no obstruction. This provision is a great help to those who are really bent on acquainting themselves with new things and modern improvements, not resting satisfied with a mere glance at the exhibits, but stopping awhile to discuss the merits or demerits, as the case may be, and perhaps exchanging ideas with brother practitioners.

In noticing the exhibits at that length which in point of merit they demand we may divide them as on previous occasions into seven sections—viz.: I., drugs; II., foods and food products; III., sanitary appliances, disinfectants, &c.; IV., surgical instruments and appliances; V., mineral waters, beverages, &c.; VI., publications; and VII., miscellaneous.

I. DRUGS.

In no other section of the annual museum is advance more striking and obvious than in that devoted to the exhibition of chemical and pharmaceutical products. More particularly will this appear so when the enormous progress which has been made in the forms of medicaments is considered. The pill is almost a thing of the past, having had to give way to the tablet, tabloid, palatinoid, and flexible capsule. And with these improvements in the design and administrative form of medicaments the drug which is thus presented has become a purer preparation, a more reliable and stable combination in the case of compounds, and satisfactory in regard to other points which are of undoubted importance in considering the therapeutics of the drug. Occupying a central position and illustrative of what we have just said was the admirably designed and electrically lighted stall of Messrs. Allen and Hanbury's (Plough-court, Lombard-street, London). Amongst the novelties of merit noticed were "Kapsols," or capsuled pills, consisting of various medicaments wrapped in a thin jujube coating. Side by side with these were the soluble capsules and "perles," tablets, throat pastilles, hypoderms, and the soluble gelatin coated pills. Then there were the tasteless oils, cod-liver oil and castor-oil, upon which this firm have bestowed considerable care and thought, and their labour has been rewarded in the attainment of "perfected" cod-liver oil and castor-oil, which are practically devoid of both unpleasant taste and smell. The series included also the valuable malt preparations, the basis of all of which is the well-known Bynin, a concentrated fluid extract. It forms an excellent vehicle for the ingredients of Easton's syrup, making a most pleasant tonic combination and withal is a digestive and nutrient. In the same way there are the "Perfected" Malt and Oil and Byno-hypophosphites, the latter a neutral solution of the hypophosphites of iron, calcium, potassium, and manganese and the alkaloids of cinchona and nux vomica. It is a perfectly stable combination, in which, too, the alkaloids are present in the condition in which they occur naturally. Considerable taste was displayed in the exhibit of Messrs. Oppenheimer, Son, and Co., Limited (Victoria House, Victoria Embankment, E.C.). The group was admirably arranged, the various palatinoids, placed in glass cups and jars of various shapes and sizes, tending not a little to the beauty of the whole design. The background consisted of soft plush in two colours which afforded a tasteful drapery. The applications of the palatinoid have apparently no limit. Thus there were palatinoids containing the extracts of animal substances, palatinoids of liquids, palatinoids of amyl nitrite, chlorodyne, chloroform and ether, beechwood creasote, &c. The value of the bipalatinoid appears emphasised in the compound syrups such as the syr. ferri hypophosph. co. and in ferrou carbonate with red marrow, a combination which has given excellent results in anæmia and chlorosis. The exhibit included the various digestive ferments and some new drugs—as, for example, hydrastin with cotarnin co. and cannabin tannate—used in gynæcological practice—and senecio aureus, a species of ragwort, a diuretic and emmenagogue. Messrs. Wyleys, Limited (Coventry), did not fail to place their fine pharmaceutical products to advantage and there were several novelties on view which were very prettily grouped. Mention should be made of the compound soluble liquors, as, for example, liq. aletris dulc., liq. viburni co., liq. papain et iridin, and liq. enonymin—all admirable

specimens of pharmaceutical skill. Pearl-coated pills, compressed pellets, "tropels" or compressed lozenges, flexible gelatin capsules, cachets, and pastels combined to make the array comprehensive and pleasing. Lastly should be mentioned "neuracetin," a comparatively new antipyretic and analgesic, drug which is said to be free from unpleasant after-effects; and "photopel," a handy developing photographic pellet. A new and interesting series of compounds was presented to view on the stall of the Pharmaceutisches Institut by Mr. Ludwig Wilhelm Gans, Frankfort-on-Maine. They are known as "halogenalbacids" and are said to be a means of administering the halogens, chlorine, iodine and bromine in an effectually therapeutic way without objectionable side effects. The iodalbacid contains 10 per cent. iodine and is reported to have yielded very encouraging results in syphilis and in other conditions in which iodine is indicated. Similarly, "bromalbacid" contains 6 per cent. bromine and gratifying results are recorded from its use in epilepsy. Lastly, "chloralbacid" contains 3 per cent. chlorine, the administration of this halogen albumen compound having been found useful in cases of chronic gastric catarrh and in dyspepsia. The feature of all these preparations is that they are albumen compounds which, while readily yielding the halogens indicated (chlorine, bromine, and iodine), are comparatively inert otherwise. We understand that at present there is no agency for the sale of these compounds in this country, but we were informed that samples would be forwarded gratis to medical men on application to Mr. Gans at the address indicated above. Examples of the application of pharmaceutical skill to the products of stable combinations were well shown at the neatly arranged stall of Messrs. Baiss Bros. and Company (Jewry-street, London). Foremost amongst these was Hopkinson's liq. colchicinæ salicyl, which has been prescribed with success in rheumatoid arthritis, chronic rheumatism, and gout. It is said to be without any depressing effect and a decided advance over colchicum wine and salicylic acid. To this should be added the mist. bismuthi. aromat., a palatable compound, pharmaceutically perfect, and of a composition of which the profession are informed. It is spoken of very highly in dyspepsia and gastric disturbance. The same preparation is combined also with pepsin as an important and valuable adjunct. Though, as might be expected, the stall of Messrs. Armour and Co. (59, Tooley-street, S.E.) was largely devoted to food products, of which we shall give an account later, yet there was an interesting and excellent collection of desiccated powders and tablets which properly come under the heading of this section. These were composed mostly of animal substances like cardin, cerebrinin, myelin, orchitic substance, ovarian tissue, pituitary body, red bone marrow, glycerine extract and powder, spleen, suprarenal capsules, thyroid gland, and so on. The experience of this well-known firm is a guarantee of the reliability and efficiency of these particular products. Messrs. C. J. Hewlett and Son (40 to 42, Charlotte-street, E.C.) brought to the notice of the visitor a very great variety of fine pharmaceutical preparations. We may mention in passing chione glabra, the decoction of the root of which in spirit yields a tincture of aphrodisiac properties, monsonia, which in the form of a rectified tincture has been employed as a remedy for dysentery with marked advantages over opium, and ipecacuanha preparations. Then there were also the animal organic substances and lastly the elegant pharmaceutical combinations of pepsine and bismuth, santal, buchu and cubebs now associated with the name of this firm. The excellent compound of cinchona, the hydrobromate, first successfully prepared by Messrs. Fletcher, Fletcher and Co. (Holloway, London, N.), was shown incorporated with vibrona champagne and "vibrona," the former being a pure *brut* wine containing a definite proportion of standardised cinchona bark in the form of neutral hydrobromate, and the latter a port wine each wineglassful of which corresponds to 5 gr. of red cinchona bark. We have already dealt critically with these preparations in Reports from THE LANCET Laboratory and also with the hydrobromate cachets which contain the neutral hydrobromate of cinchona. There was a very wide assortment of pharmaceutical preparations in the admirably equipped exhibit of Messrs Parke, Davis and Co. (21, North Audley-street, W.). Of particular merit were the standard fluid extracts standardised chemically, and where this is not possible physiologically, examples of which are afforded in ergot, cannabis Indica, digitalis and strophanthus. The exhibit contained also sugar-coated and gelatin-coated pills, enteric pills (passing the stomach but dissolving in the intestinal cavities), soluble gelatin capsules, tablet triturates, and digestive ferments, the most remarkable of which is taka-diastase possessing a remarkable amylolytic power under both an acid and alkaline environment. Messrs. H. C. Baildon and Son (73 and 144a, Princes-street, Edinburgh) offered some interesting novelties for inspection. In addition to the preparations for dermatological application which are associated with the name of Dr. Unna, the well-known Hamburg physician, there was exhibited a useful modification of iron pill known as pil. ferri co. (Dorall), the formula of which includes reduced iron, nux vomica, aloes, belladonna, and hyoscyamine. Worthy of attention also was the malt and mullein preparation which is a compound of pure active extract of malt and the juice of the mullein plant (Verbascum thaspus). This combination appears to promote nutrition and has been employed in wasting diseases. Finally, the exhibit included aperient fruit lozenges, the basis of which is the bark of the Rhamnus frangula. They act as a mild laxative and are free from drastic intestinal effects. Close by was an interesting collection, both historically and scientifically, of pharmaceutical preparations by Messrs. T. H. Smith and Co. (21, Duke-street, Edinburgh). The operations of this firm date, it appears, from the time when the late Sir James Simpson adopted chloroform as an anæsthetic, under whose guidance they paid special attention to the manufacture and purity of this product. In the exhibit were included some remarkably fine specimens of opium in lumps and sticks, while an exceedingly interesting series of the crystalline principles of opium, including codeine and other less known alkaloidal bodies such as xanthalin, were presented for inspection. Several specimens of the active principles of plants were also shown, as, for example, aloin, salicine, and piperine. Credit is due to Messrs. Robertson and Co. (35, George-street, Edinburgh) for the excellence of arrangement of their display. The preparation calling particularly for mention was the Blaud ferruginous pill, made in accordance with the original design and yielding pure ferrous carbonate as a product of inter-action of the ingredients. Besides this there was a praiseworthy series of gelatin capsules, discs, and "perles" and an antiseptic preparation in the form of dusting powder, or cream, as preferred, and known as "borozine," being a chemical combination of oxide of zinc and boric acid. Not far off was a series of synthetic remedies and other chemical and pharmaceutical preparations exhibited by Messrs. Raimes, Clark, and Co. (Edinburgh). On the same table was a series of specimens by the Scottish Acid and Alkali Company, Limited (Longford Chemical Works, Kilwinning, N.B.), relating to the preparation of iodine and iodides from "kelp" or seaweed ash. Amongst these was a beautiful collection of iodine crystals under a glass dome, the dome itself being filled with violet iodine vapour. Hydroxyl-free cod-liver oil is now well known to the medical profession, the elimination of the hydroxyl compounds securing a final product free from the tendency to cause nauseous eructations. This is the process of Mr. Peter Möller (43, Snow-hill, E.C.), whose stall was chiefly occupied by specimens of the oil thus refined, and illustrations were also given of the objections to the old process of preparation by which decomposition products were evolved. As might be expected the well-known firm of Messrs. Duncan, Flockhart, and Co. (104–106, South Canongate, Edinburgh) had a large and representative display of their special preparations. Foremost among these, not to mention the chloroform, the purity of which is deservedly and properly associated with the name of the firm, were the flexible yet non-collapsible gelatin capsules. Of these there were the following: Blaud's pill, Easton's syrup, cascara with or without euonymin, podophyllin, belladonna, nux vomica, &c.; potassium bichromate capsules and syrup of iodide of iron. In addition to these were perles, plastic pills, concentrated mixtures for dispensing, fluid extracts, and other elegant pharmaceutical preparations and combinations. It is enough to mention that the exhibit of chief interest under this section on the stall of Price's Patent Candle Co. was glycerine, which stands pre-eminently as an eminently pure product. This firm, we believe, were the first to separate and concentrate glycerine after the fatty acids of fats have been removed by saponification. We shall return to the rest of the exhibits of this firm, which properly come under the heading of another section. Messrs. Stephen

Smith and Co. (Malmesbury-road, Bow) decorated their stall chiefly with coca wine, which has already been reported upon in our analytical columns. The preparation is a standard one containing a definite proportion of the principles (intact) of the leaf of erythroxylon coca in combination with a sound port wine. In addition also was a beef wine known as "keystone" with the same wine as basis, but embodying the extractives of beef. The Maltine preparations (the Maltine Manufacturing Company, Limited, 24 and 25, Hart-street, Bloomsbury) have of late years been valuably extended, as, for example, in the combination of Maltine with coca wine, maltine with Easton's syrup, with pepsin and pancreatine, cascara sagrada, phosphates (chemical food), pyrophosphate of iron, &c. The value of such combinations with a reliably active malt essence will be readily conceded. Kutnow's effervescent Carlsbad powder has by the evidence of experience established its claim to being "improved." The active salts present are identical with the world-renowned Carlsbad salts except that they are desiccated, which offers distinct advantages for administration. Recent trials have also shown that the powder is valuable in constipation in infants, a quarter of a teaspoonful taken in milk or liquid food producing a mild, gentle action. In this exhibit also was submitted for inspection the pulvis Kutnovii anti-asthmaticus. There were three new interesting products on the stall of Messrs. Zimmer and Co. (33, Lime-street, E.C.). The first was "euquinine," a substitute for quinine in which a hydrogen atom has been replaced by a molecule of ethyl carbonate. It is said to present the therapeutic advantages of quinine without, however, its drawbacks. The second novelty was "eunatrol," a pure oleate of sodium, and why, therefore, coin a new name? Surely "pure oleate of sodium" is sufficiently descriptive and comprehensive. It is suggested as a cholagogue, having a favourable action on the secretion of bile. Lastly, "validol" is a combination of menthol and valerianic acid, the former being stated to be indefinitely soluble in the latter. It is described as "an excellent anti-hysteric, stomachic, and carminative," while recent experience would seem to point out the compound as worthy of further trial in seasickness. The exhibit of Messrs. Scott and Bowne, Limited (95, 96, 97, and 98, Great Saffron-hill, E.C.), was devoted entirely to "Scott's Emuision," on which we have so recently reported in our analytical columns as to require no further comment. The "father" of malt extracts, that of Leopold Hoff (29, New Bridge-street, London, and Hamburg), was well represented, and an addition of some importance consists in a combination of the extract with manganite of iron. Mr. B. Kühn (36, St. Mary-at-hill, London) brought to the notice of the visitors to the museum the various preparations of value in surgical practice containing chinosol as a basis. Used in proper proportions this powerful antiseptic is non-poisonous, non corrosive, and soluble in water. In addition there were shown "iodoformogen" powder, a chemical compound of iodoform albumin with little smell but presenting the same properties of iodoform; tannalbin, a non-toxic intestinal astringent and useful in checking diarrhœa; diuretin, as its name implies a diuretic of value in many cases; colchi-sal, a solution of pure colchicine in natural methyl salicylate and betul-ol liniment for outward application where colchi-sal capsules are not tolerated by the stomach.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In July the following candidates passed in the subjects indicated:—

Surgery.—F. Adams, St. Thomas's Hospital; L. D. B. Cogan, Guy's Hospital; A. W. H. Edgelow, Charing-cross Hospital; J. L. Elliott and T. A. E. Fawcett (Section I.), Leeds; F. Hasler (Section II.), London Hospital; G. C. Hobbs (Section II.), St. Bartholomew's Hospital; A. J. Kennedy, Edinburgh; R. A. Lewty, Leeds and St. Mary's Hospital; E. P. Marett, St. Thomas's Hospital; L. R. Marshall, St. Mary's Hospital; M. Pantin (Section II.), Royal Free Hospital; E. J. Parry, St. George's Hospital; W. J. Schuller (Section I.), London Hospital; D. C. M. Shaw, Manchester; and A. P. Square, Middlesex Hospital.

Medicine.—F. Atthill (Section I.) and E. U. Bartholomew, Charing-cross Hospital; M. E. Bennett (Section II.), Royal Free Hospital; G. F. M. Clarke and H. E. Dalby, Charing-cross Hospital; A. G. C. Davies (Section I.), Guy's Hospital; S. E. Dunkin and J. M. Edwards (Section II.), Charing-cross Hospital; P. T. Goodman, St. Thomas's Hospital; E. J. Gruchy and F. Hasler (Section II.), London Hospital; E. S. Johnson, St. Mary's Hospital; A. J. Kennedy, Edinburgh; W. R. Wilson, Dublin and Belfast; and C. C. Worts, Guy's Hospital.

Forensic Medicine.—F. Atthill, E. U. Bartholomew, and H. E. Dalby, Charing-cross Hospital; A. G. C. Davies, Guy's Hospital; S. E. Dunkin, Charing-cross Hospital; E. J. Gruchy, London Hospital; J. W. Haigh, Leeds; A. J. Kennedy, Edinburgh; J. M. Sanderson, Cambridge and London Hospital; S. Sugden, Manchester; and C. C. Worts, Guy's Hospital.

Midwifery.—W. F. E. Ashton, Birmingham; E. U. Bartholomew, Charing-cross Hospital; M. E. Bennett, Royal Free Hospital; T. A. E. Fawcett, Leeds; P. T. Goodman, St. Thomas's Hospital; J. W. Haigh, Leeds; H. L. Hands, Charing-cross Hospital; F. Hasler, London Hospital; D. F. Kennard, St. Mary's Hospital; A. J. Kennedy, Edinburgh; E. P. Marett and W. P. R. Newth, St. Thomas's Hospital; S. Sugden, Manchester; J. Taplin, Birmingham; L. L. G. Thorpe, University College Hospital; and T. J. Vick, Guy's Hospital.

Messrs. F. Adams, J. L. Elliott, A. W. H. Edgelow, F. Hasler, A. J. Kennedy, R. A. Lewty, E. J. Parry, J. M. Sanderson, A. P. Square, and Miss M. Pantin were granted the diploma of the Society entitling them to practise medicine, surgery, and midwifery.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

Degree of Doctor of Medicine (M.D.).—George Allen, M.B., C.M., Fife-Keith, Banffshire; Henry Angus, M.B., C.M., Bingley, Yorks; Wm. Henry Hewlett, M.B., C.M., Wivenhoe, near Colchester, Essex; Francis Kelly, M.B., C.M., Aberdeen; Frederick Marrant Robertson, M.B., C.M., London (old regulations); * David Ross, M.B., C.M., London; Alfred Tennyson Smith, M.B., C.M., Orpington, Kent; Daniel Malcolm Smith, M.B., C.M., Liscard, Cheshire; Robert Turner, M.A., M.B., C.M., Eastwood, Notts; and James Shirran Walker, M.B., C.M., Newton Heath, Manchester.

* Considered worthy of highest honours.

Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).—Robert John Brown, Aberdeen; John Gerald Chalmers, Aberdeen; Alfred James Hynd, Aberdeen; John Gordon Smith Macpherson, Aberdeen; Ian Macquarrie, Conon Bridge, Ross-shire; Hector Munro, Fortrose, Ross-shire; Harry Michael Nicholls, Paglesham, Essex; and Charles Gabriel Perles, Colombo, Ceylon.

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).—David Hunter Ainslie, Taitswell, Mintlaw, Aberdeenshire; Robert John Cheves, Middleton of Rora, Longside, Aberdeenshire; Robert Henderson Clarke, East Cottingwood, Morpeth; Frederick William Ellis, Hayle, Cornwall; Adam George Gordon Macleod Fraser, Aberdeen; David Albert Hutcheson, Aberdeen; Robert Fergus Hutchison, Ingleside, Cults, Aberdeen; Forbes Kinnear, Dysart, Montrose; Henry James McGrigor, Torry, Aberdeen; Donald Munro Maciver, Stornoway, Lewis; Farquhar McLennan, Achnashellach, Ross-shire; † John James Rickard Macleod, Aberdeen; Alexander Dalrymple McQueen, Aberdeen; George Jamieson Pirie, Rousay, Orkney; Charles Edward Preston, B.A., Wigton, near Carlisle; William Tuach, Redcastle by Inverness; and Alexander Brown Walker, Aberdeen.

† With honourable distinction. Awarded the Alexander Anderson Scholarship; *proxime accessit*, George F. Petrie.

The John Murray Medal and Scholarship (awarded to the most distinguished graduate (M.B.) of 1898) has been gained by Joseph Alex. Thomson, M.B., Ch.B., B.Sc. Cullen.

Diploma in Public Health.—Middleton Connon, M.B. (Aberd.), Aberdeen; Thomas Wright Parkinson. M.B. (Edin.), Brechin; and George Albert Turner, M.B. (Aberd.), Aberdeen.

MEDICAL MAGISTRATE.—Mr. Kenneth M. Chisholm, M.D. St. And., L.R.C.P., L.R.C.S. Edin., of Radcliffe, has been appointed a Justice of the Peace for the County Palatine of Lancaster.

WEST OF ENGLAND EYE INFIRMARY.—At the meeting of the governors of the West of England Eye Infirmary, Exeter, held on July 15th, it was stated that the donations and promises to the building fund now amounted to £6600. The building committee, seeing the urgent need for increased accommodation, recommended that the first section of the new works, which it is estimated will cost £30,000, should be commenced in August, but after considerable discussion it was decided not to commence building until £10,000 had been raised.

MANCHESTER ROYAL INFIRMARY.—At a meeting of the governors of this institution on Monday last, the chairman, Mr. E. S. Heywood, announced that Mr. Arthur H. Haywood, of Windermere, had presented to the infirmary a very interesting picture, a copy by a skilful artist of Sir Joshua Reynolds's portrait of the great surgeon, John Hunter, which hangs in the board-room of the Royal College of Surgeons of England. The copy is a most faithful and excellent representation, and will find a suitable home in the infirmary.

PRESENTATIONS TO MEDICAL MEN.—The members of the Clayton Branch of the St. John Ambulance Association on bringing their first and successful session to a close on June 23rd presented their instructor, Mr. E. G. Peck, L.R.C.P. Edin., M.R.C.S. Eng., of Queensbury, Bradford, with a fish knife and fork with pearl handles.—On June 27th Mr. G. S. R. Stritch, L.R.C.P., L.R.C.S. Edin.,

L.F.P.S. Glasg., of Spennymoor, was the recipient of a case of dental instruments and a gold signet ring from his patients and friends on the occasion of his leaving that town.—In connexion with the Bridlington Branch of the North-Eastern Railway centre of the St. John Ambulance Association, on awarding, on July 1st, efficiency certificates to the successful candidates, Mr. Theodosius Thompson, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Bridlington Quay, the honorary instructor of the class, was the recipient of a silver-mounted walking stick in grateful recognition of his ambulance instructions.—The members of the Society of Medical Phonographers have presented to Dr. Gray of Oxford, the first treasurer of the society, a gold fountain pen. Dr. Gray recently resigned the treasurership of the society.—Fifty-two years having elapsed since Mr. John Burns, F.F.P.S. Glasg., of Bridgeton, commenced practice there his many friends and patients recently expressed the desire to present him with some tangible token of their esteem. A committee was accordingly formed and subscriptions were freely offered by all classes of the community. After some consideration it was decided that the form of presentation should consist of a brougham for his use and a portrait in oils for the adornment of his home, and on July 5th, at the Albert Hall, Bridgeton, Mr. Burns was presented with a brougham, a set of harness, and an outfit for the coachman. The portrait will not be completed for a month or two, but when finished the committee intend to invite all the subscribers to witness the presentation.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Pharmacy Acts Amendment Bill.

THIS Bill has been passed without a provision to meet the case of companies carrying on the business of drug stores. The Lord Chancellor drew up such a provision, but at the last moment he determined not to move it. In announcing this decision his lordship said he quite recognised the need for legislation to meet the point, but he found that a great deal of machinery would be necessary and he did not see his way to encumber this Bill with it.

The Vaccination Bill.

The Vaccination Bill now stands for third reading in the House of Commons and against that motion there appears in the notice paper the following amendment by Mr. Duncombe—viz.: "That this House declines to proceed further with a Bill which, while removing all reasonable objections to compulsory vaccination, deprives the people of the United Kingdom of the proved advantages of the enforcement of the Vaccination Acts, 1867 and 1871."

HOUSE OF COMMONS.

THURSDAY, JULY 21ST.

Factory Prosecutions.

Mr. DRAGE asked the Home Secretary whether any cases had been brought to his notice in which women or children had been dismissed by their employers in consequence of evidence given by them in support of prosecutions undertaken by Her Majesty's Inspectors of Factories, and, if so, whether he proposed taking any action in the matter.—Sir M. WHITE RIDLEY replied: Yes, cases of this kind do from time to time come to my notice. As the law stands, however, I have no power to take any action in the matter, and in view of the great difficulties in regard to proof which are experienced in cases of a similar kind under the Witnesses' Protection Act, 1892, it seems very doubtful whether the matter can be remedied by legislation. Much more good, I think, can be done by the voluntary action of such a committee as I am glad to see is in process of formation for the very purpose of rendering help in these cases.

Diseased Foreign Meat.

Mr. BROADHURST asked the President of the Board of Agriculture whether he could inform the House of the number of cattle lost by death from disease in recent cargoes from the River Plate; whether he could inform the House of the nature of the disease; and whether in the case of those arriving in the Thames alive and slaughtered at Deptford a careful examination was made of the carcass to prevent suspected meat finding its way to the markets.—Mr. WALTER LONG replied: I have made inquiries on this subject but I find no reason to believe that any losses occur amongst cattle brought from the River Plate by reason of disease. The examination of the carcasses with a view to the protection of the public health rests with the local authorities, who in the particular instance referred to have appointed a special inspector for the purpose, but in addition the Board's veterinary officers are instructed to call attention to any carcasses which in their opinion are unfit for human food.

Tuberculosis.

Mr. BROADHURST asked the President of the Board of Agriculture whether he had reason to believe that tuberculosis was prevalent in the dairy herds of the country; and, if so, whether any steps were being taken to warn the consumers of milk of the danger to young children by drinking milk from cows so affected.—Mr. WALTER LONG replied: With regard to the prevalence of tuberculosis among dairy stock I would refer the hon. Member to the very full statement on the subject contained in the report of the recent Royal Commission. I do not myself think that the issue of any warning on the subject is necessary, but the matter is one for the consideration of the Local Government Board rather than of myself.—In reply to further questions on the same subject Mr. LONG said it was not at present contemplated to take any action on the recommendations of the Royal Commission, and as to circulating as a leaflet the information in the report on this subject that was a suggestion he should be quite willing to consider.

Dysentery in Upper Egypt.

Mr. LECKY asked the Under Secretary of State for Foreign Affairs whether the Government in Egypt had made any inquiry into the causes of the epidemic of dysentery which broke out at Assouan last February and led to the deaths of three ladies, and, if so, whether the report could be obtained; and what authority in Egypt inspected and was responsible for the sanitary conditions under which hotels and post-boats in Upper Egypt were conducted.—Mr. CURZON said that no information had been received at the Foreign Office as to cases of dysentery at Assouan last February, but Mr. Rodd would be asked to obtain a copy of any report which might exist on the subject and also in regard to the inspection of hotels and post-boats.

The Cantonment Rules.

Mr. JAMES STUART asked the Secretary of State for India whether in the draft cantonment rules sanctioned by him in his despatch of July 8th, 1897, it was provided that any medical practitioner who in the course of his practice becomes cognisant of the existence in any person of any infectious or contagious disorder shall be bound under penalty to give information to the cantonment authority, and whether the Indian Government had given any reason for omitting this provision in the cantonment regulations issued by them under date Oct. 15th, 1897, and now in operation.—Lord GEORGE HAMILTON said, in reply, the Government of India were of opinion that the rule to which this question refers was as originally drafted too wide and that it required modification. As, however, it was desirable to issue the rules without delay they decided to publish them without this particular rule which they reserved for further consideration, but it was, and is, their intention to restore it in a modified form. This will shortly be done and I will then lay it on the table of the House.

FRIDAY, JULY 22ND.

Treatment of Infectious Disease in the Navy.

Mr. MENDL asked the First Lord of the Admiralty whether the Admiralty intend to build an infectious diseases hospital on the eastern portion of the Naval Hospital grounds at East Stonehouse; and whether, having regard to the fact that this site is adjacent to a very densely and poorly populated quarter of the borough of Plymouth, the Admiralty would in any decision that may be arrived at in the matter consider the danger to the neighbourhood involved in the erection of a hospital for the treatment of infectious diseases; and whether the Admiralty were prepared to consider the advisability of maintaining hulks in Plymouth Sound for the purpose of isolating and treating infectious diseases such as are now maintained by the local authorities of Plymouth, Devonport, and Stonehouse.—Mr. AUSTEN CHAMBERLAIN, who replied for the First Lord, said: New wards for the treatment of infectious cases are being erected on the site named to replace the existing infectious wards, which are unsuitable for the purpose and are required for other cases owing to the growth of the fleet. The new wards will be properly isolated in accordance with the rules of the Local Government Board and will cause no danger to the surrounding district.

Experiments on Living Animals.

Mr. MACNEILL asked the Home Secretary whether his attention had been directed to the greater frequency of the admitted breaches of the law by vivisectors; whether any prosecutions had been instituted under the provisions of the Act of 1876 and if so how many; whether any convictions, and if so how many, had been obtained; whether his attention had been directed to the circumstance that in the return of experiments performed on living animals during the year 1897 Dr. Poore, the inspector, states on page 5 that illegal experiments performed admittedly by persons without the necessary licences and certificates have been recorded as performed by persons holding those licences and certificates; whether Dr. Poore had been asked to give any explanation of this inclusion of illegal experiments in the catalogue of legal experiments; how many inspections of places licensed for the practice of vivisection had been during the year 1897 severally reported to the Home Secretary by Dr. Poore and Sir James Russell; were these inspections carried on during the performance of experiments or were the bodies of the vivisected animals subsequently inspected; were there any inspections of experiments by operators with certificates enabling them to vivisect in unregistered places; and how are such inspections, if any, carried out; and whether he would publish the names of the persons who, on the admission of the report, have performed with impunity illegal experiments on the bodies of living animals.—Sir M. WHITE RIDLEY replied: There were two such cases in each of the years 1894-96 and seven in 1897, but all arose from inadvertence and were not, in my opinion, of a serious character and certainly were not fitting cases for prosecution. There has been only one prosecution under the Act and in that case the proceedings were dismissed. It is the case that two of the licensees (by what I am satisfied was mere inadvertence) omitted to apply for renewal of their licences. This is stated on page 5 of the report. It is also stated on page 7 that the list of licensees contains the names of these two gentlemen. The licences would certainly have been renewed if the ordinary application had been made. I see no objection to this course having been adopted. Dr. Poore paid 61 visits of inspection to licensed places in 1897 and Sir James Russell 68. Some of these visits took place during the performance of experiments and many animals that had been experimented upon were seen by the inspector. The only experiments performed elsewhere than at registered places are inoculation operations in connexion with the diseases of cattle and inspection in such cases is deemed unnecessary and does not take place. With regard to the publication of the names of persons who have performed illegal experiments, I do not think it necessary or right that such publication should take place when the illegality has not been of so serious a nature as to call for the institution of legal proceedings.

Food Products Adulteration.

Mr. CHAPLIN introduced a Bill "to make better provision against the adulteration of certain articles of agricultural and horticultural produce." The right hon. gentleman explained that the measure was

not introduced on grounds of public health, nor did it deal with any question of public health, because against adulteration which was injurious to health they believed the powers possessed under existing legislation were adequate. The object of the measure was to make the law more effective to prevent fraudulent trading in certain articles by adulteration or otherwise than it was at present under the Merchandise Marks Acts and the Sale of Food and Drugs Acts. The Bill dealt with food products only and did not refer to the other articles mentioned in these Acts which must be dealt with in another measure. In the case of foreign products the Commissioners of Customs were to take samples of consignments of imported milk or butter in accordance with directions given by the Treasury after consultation with the Board of Agriculture. A sample having been taken part of it was sent to the importer and part to the principal chemist of the laboratory at Somerset House, and it would be the duty of the latter to ascertain by examination whether the milk or butter was adulterated or impoverished within the meaning of the Bill—in other words, whether anything had been extracted from it or any foreign substance added to it so as to affect injuriously its substance, quality, or nature. If the sample proved to be adulterated the head of the laboratory was to inform the Commissioners and the Board of Agriculture of that fact at once. The Commissioners would then inform the importer, the Board of Agriculture would publish the fact, future consignments from the same quarter would be suspect, and the Commissioners of Customs would be empowered to detain any subsequent consignment bearing the same import marks and coming from the same suspected quarter, as if they were prohibited goods, unless the importer should have given the Commissioners security against the adulteration of the consignment. With regard to adulteration at home, the allegation was that, while the existing Acts would be perfectly adequate if they were efficiently administered, in some districts and in many cases they were to a large extent inoperative because the local authorities would not do their duty in enforcing them. It was proposed by this Bill to give to the Board of Agriculture power to direct any of its officers to procure samples of food which was exposed for sale or in course of delivery for sale; and if the Board was satisfied that it was adulterated within the meaning of the Act, then it would notify the fact to the local authorities of the place where the sample was taken and call upon them to be more active in the performance of their duty. If the local authority responded to the appeal nothing further would be necessary. If, on the other hand, they continued to be negligent the Board of Agriculture would have power to enforce the Act itself and to recover the costs from the local authority. In connexion with the taking of samples he reminded the House that the committee which sat upstairs on this subject recommended that there should be a court of reference to prescribe standards of quality and purity for all kinds and descriptions of food. Instead of setting up that rather cumbrous machinery the Bill provided that the Board of Agriculture, after causing such inquiry to be made as it might think fit, was to have the power of making regulations for determining what should or should not be considered adulteration or impoverishment in milk or butter within the meaning of the Act. Difficulties had not uncommonly arisen in the past owing to differences of opinion between the local analysts and the officers of the Government laboratory, and these difficulties would be obviated in the future by this proposal. Margarine which was imported as butter, or which was not distinctly marked and consigned as margarine in accordance with the law, would be liable to detention and would be dealt with under the provisions in Section 2 of the Bill to which he had referred. The mode in which margarine was to be marked was prescribed and the occupier of a manufactory of margarine or a wholesale dealer in margarine would be required to keep a register showing the quantity and destination of each consignment of margarine sent from his place of business, and this register was to be open to the inspection of an officer of the Board of Agriculture.—The right hon. gentleman had not completed his exposition of the Bill when he was called to order by the SPEAKER, who reminded him that under the rules of the House he was only permitted on this occasion to make a brief explanatory statement. Mr. Chaplin accordingly resumed his seat.

MONDAY, JULY 25TH.

Vaccination Questions.

Mr. LABOUCHERE asked the President of the Local Government Board whether public vaccinators as such were entitled to superannuation on pension terms under the present law, and, if not, whether they would be entitled to it if the Vaccination Bill became law; what was the number of public vaccinators in England and Wales, and in the event of their becoming entitled to a superannuation allowance under the Vaccination Bill would their previous service be taken into consideration in fixing the amount; how was it intended that the public vaccinators should be remunerated, whether by fee per visit, or by salary, or by each vaccination, and would such remuneration be payable by the local authorities, and if so what powers would they have to fix and alter the remuneration; whether the obligation to satisfy two magistrates of conscientious objection to vaccination, as set forth in the Bill, meant that this obligation must be undertaken by the father or that it might be fulfilled either by father or mother; and whether, if by the father alone, a child whose father was absent from his home during the period allowed for this formality could be contracted out of the obligation to be vaccinated by the mother appearing before two magistrates and stating her conscientious objection.—Mr. CHAPLIN said: The reply to the first paragraph is in the negative. The number of public vaccinators in England and Wales is about 3000. With respect to the third paragraph no matured decision has been at present arrived at, nor is it necessary, for the Act is not drawn to come into operation until Jan. 1st next. What is contemplated, however, is some arrangement like this: remuneration by two methods—first, by a payment based on the number of births to cover the general duties, and, secondly, by a payment in each case of successful vaccination; the amount of these payments to be a matter for arrangement in the first instance between the public vaccinator and the guardians by whom the payments will be made, subject, as in the case of all the principal officers of boards of guardians, to the approval of the Local Government Board. In answer to the last two paragraphs the obligation should be undertaken by the person in custody of the child, whether father or mother. If the father is prevented by absence or other unavoidable cause, then the duty would naturally fall on the mother.—Sir CHARLES DILKE asked the Lord Advocate whether it was intended to propose legislation to extend to Scotland any part of the provisions of the Vaccination Bill.—The LORD ADVOCATE replied: The system in regard to vaccination carried out in Scotland has hitherto worked successfully and the Secretary for Scotland cannot at present come under any obligation to propose legislation on the subject.—Mr. T. P. O'CONNOR asked whether it was not the case that in Scotland the defaulters were only 3 per cent. of the whole.—The LORD ADVOCATE: I cannot speak as to that but there has been no practical difficulty in working the Acts in Scotland.

Mischievous Advertisements.

Mr. CHANNING asked the Home Secretary whether he had considered the facts disclosed in the recent trial of Dr. Collins, and in many previous trials of similar character, and the use made in the St. Neots case of a notorious advertisement; whether he was aware that an enormous number of advertisements inciting to criminal offences of this nature are regularly being inserted in the metropolitan and provincial press, and that a vast amount of social mischief and crime was alleged to arise from these advertisements; and whether he would introduce or support effective legislation to prevent the insertion in the press or other distribution of advertisements of this class, and strengthen the law in dealing with incitements to these offences.—Sir M. WHITE RIDLEY replied that he was fully aware of the character of these advertisements, but legislation on the subject, he was afraid, would be a matter of great difficulty and he was not prepared at present to give any undertaking to introduce it. He would, however, bear the subject in mind.—Mr. CHANNING said that in consequence of this answer he begged to give notice that on an early opportunity next session he would introduce a Bill on the subject himself.

TUESDAY, JULY 26TH.

The General Medical Council and Unqualified Assistants.

Mr. LOGAN asked the First Lord of the Treasury if he was aware that in December last the General Medical Council passed a resolution disapproving of the employment by medical men of unqualified assistants, in consequence of which a large number of such assistants, who had been trained for the medical profession, many of whom have families, are and will be deprived of the means of obtaining a livelihood; and if there were any means whereby he could intervene and provide that those now or recently so employed shall be permitted to continue their vocation.—Mr. BALFOUR: In answer to the hon. Member I have to say that the General Medical Council did, as I am informed, pass a resolution against the practice of employing unqualified assistants for certain purposes which may in some cases have the effect which the hon. Member apprehends, but the resolution is not to be applied so as to restrict the proper training of pupils or prevent the legitimate employment of certain unqualified assistants under the immediate supervision of registered medical practitioners. The Privy Council, which has no official knowledge of the matter, cannot interfere to protect the persons affected, but it is understood that every case brought to the notice of the General Medical Council will be dealt with on its merits.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, H., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

ANSON, G. E., M.D. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

BARNES, J. S., M.D., B.S. Camb., has been appointed a Resident Medical Officer and Public Vaccinator for the Urban, Suburban, and Rural Districts of Katanning, Western Australia.

BLAXLAND, W., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Public Vaccinator for South Australia.

CHAPPLE, W. A., M.B. Univ. N. Z., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

CLAYTON, G., has been appointed Public Analyst for the Parish of Fulham, S.W.

COLLINS, W. E., M.B. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

CONNELLY, A. W., M.B., Ch.B. Melb., has been appointed a Resident Surgeon for the Bendigo Hospital, Victoria, Australia.

CORRY, W., M.D., Ch.M. Irel., D.P.H. Camb., has been appointed a Public Vaccinator for the Phillip Island Shire, Victoria, Australia, vice R. Jones, resigned.

DENBY, W., M.B., C.M. Edin., has been appointed a Medical Officer for the Fourth Sanitary District of the Bradford (Yorks) Union.

DOWE, S. A., M.D. Univ. Penn., U.S.A., has been appointed a Government Officer for the district of Bobadah, New South Wales.

FARQUHARSON, W. F., M.B., C.M. Edin., has been appointed Medical Superintendent for Garlands Asylum, Carlisle, vice J. A. Campbell.

FYFFE, R. H., M.B., Ch.M. Glasg., has been appointed an Honorary Pathologist for the Wellington Hospital, New Zealand.

GARDNER, H. BELLAMY, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Anæsthetist to the Charing-cross Hospital, London, vice F. W. Hewitt, resigned.

GODFREY, C. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Acting Medical Superintendent for the Ballarat Lunatic Asylum.

GRANT, DAVID, M.D. Edin., Ch.M., has been appointed an Honorary Physician to the In-patients of St. Vincent's Hospital, Melbourne, Australia.

GWYNNE, C. N., M.D. M.Ch. Dubl., L.M.R.C.P. Irel., has been appointed a Certifying Surgeon under the Factories Act, Sheffield, vice R. J Pye-Smith, resigned.

HIGGINS, F. C., M.B. Syd., has been appointed a Government Medical Officer and Vaccinator at Walgett, New South Wales.

JAMES, D. P., F.R.C.S. Eng., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

LESLIE, W. M., M.D., C.M. Edin., has been appointed to assist the City Judges as Medical Referee under the Workmen's Compensation Act, for cases arising in the City of London.

LIMRICK, W.S., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Waterloo-with-Seaforth Urban District Council.

LLOYD, J. W., M.R.C.S., L.R.C.P. Lond., L.D.S. Edin., has been appointed an Honorary Surgeon for the Liverpool Dental Hospital.

MACFARLANE, WM., M.D., C.M. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheriffdom of Ayr.

MACKAY, ALEX., M.D., C.M. Glasg., has been re-appointed a Medical Officer of Health by the Crook Urban District Council.

MACKENZIE, F. W., M.B., C.M. Edin., has been appointed an Honorary Ophthalmic Surgeon for the Wellington Hospital, New Zealand.

MARTIN, A., M.D. Lond., M.R.C.P., M.R.C.S., has been appointed an Honorary Surgeon for the Wellington Hospital, New Zealand.

MARTIN, FRED. W., M.R.C.S., L.R.C.P. Edin., has been re-appointed Medical Officer of Health for the Borough of Brighouse.

MCGEE, J. H., M.D., B.Ch. Irel., D.P.H. Camb., has been appointed an Honorary Physician to the Out-patients, St. Vincent's Hospital, Melbourne, Australia.

NEWMAN, F. A., M.B., Ch.B. Melb., has been appointed Honorary Physician to Out-patients, St. Vincent's Hospital, Melbourne, Australia.

POLLEN, H., M.D. Dubl., L.K.Q.C.P. Irel., has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

POWELL, HENRY WILLIAM FITZGERALD, M.D., F.R.C.S. Edin., has been appointed a Physician to the Hospital for Diseases of the Throat, Ear, and Nose, Golden-square, London, W.

PYE-SMITH, R. J., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Sheffield and Rotherham County Districts of Circuit No. 13.

ROSENFIELD, R. L., M.B. Melb., has been appointed a Government Medical Officer and Vaccinator for the district of White Cliffs, New South Wales.

RYAN, T. F., M.B. Melb., has been appointed, *pro tem.*, Acting Public Vaccinator at Nhill, Victoria, Australia.

SELLS, C. J., L.R.C.P. Lond., M.R.C.S., has been re-appointed a Medical Officer for the Worplesdon Sanitary District of the Guildford Union.

SHARMAN, MARY NONA, M.B. Lond., has been appointed House Surgeon for the Victoria Hospital for Sick Children, Hull.

SOMERSET, W. R., M.B., Ch.B. Edin., has been appointed an Assistant House Surgeon for the Worcester Infirmary.

SMITH, J. M., M.B., C.M. Edin., F.R.C.S. Eng., has been re-appointed Junior Anæsthetic Medical Officer for the Manchester Royal Infirmary.

STURDY, J. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Medical Officer for the Fifth Sanitary District of the Bradford (Yorks) Union.

TEARE, J., M.B., B.S. Vict. Univ., Manchester, has been appointed an Honorary Physician for the Wellington Hospital, New Zealand.

THORNE THORNE, LESLIE, M.D. Durh., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Examiner to the Technical Education Board of the London County Council.

WILSON, G. B., L.R.C.P., L.R.C.S. Edin., has been appointed a Public Vaccinator for South Australia.

WOODSIDE, R. N., M.B. Melb., has been appointed a Medical Superintendent for the Albury Hospital, New South Wales.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ANCOATS HOSPITAL, Manchester.—Resident Junior House Surgeon. Salary £50, with board and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Honorary Medical Officer.

BOROUGH OF DERBY.—Medical Officer of Health. Salary £500 per annum, increasing by £50 per annum to £600 at intervals of two years. Applications to the Town Clerk, Town Hall, Derby.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE, Chelsea, S.W.—A Teacher of Hygiene.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about two months. Salary £2 2s. per week and all found (except liquors).

CROYDON RURAL DISTRICT COUNCIL.—Deputy Medical Officer of Health for one year. Salary at the rate of £550 per annum, which will include travelling and all other expenses. Applications to the Clerk, Town Hall, Croydon.

CUMBERLAND AND WESTMORELAND ASYLUM, Carlisle.—Senior Assistant Medical Officer. Salary £120 a year, with board. Applications to Dr. Farquharson, Garlands, Carlisle.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for twelve months. Salary £40, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Institution.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Junior Assistant House Surgeon for six months. Board, lodging and washing provided and an honorarium of £10 will be given conditionally.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

ROYAL INFIRMARY, Sheffield.—Junior Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing.

RURAL DISTRICT COUNCIL OF CHESTERFIELD.—Medical Officer of Health for one year. Salary at the rate of £500 per annum, which includes all expenses, stationery excepted. Travelling expenses outside the district will be allowed. Applications to the Clerk to the Council, Union Offices, Chesterfield.

SALFORD SCHOOL BOARD.—Medical Officer. Salary £150 per annum. Applications to the Clerk to the Board, School Board Offices, Salford.

SOMERSET AND BATH ASYLUM, Wells, Somerset.—Junior Assistant Medical Officer, unmarried. Salary £110, rising to £130, with board, lodging, washing, and attendance.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeons for six months. Honorarium at the rate of £30 per annum and residence, board, and washing provided.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Board, washing, and lodging in the hospital provided.

THREE COUNTIES ASYLUM.—Second Assistant Medical Officer, unmarried. Salary commencing at £125 per annum, with board, apartments, washing, and attendance. Applications to the Clerk to the Committee of Visitors, St. Neot's, Hunts.

UNIVERSITY COLLEGE, Bristol, Faculty of Medicine.—Demonstratorship of Physiology. Stipend £125.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE, Cardiff.—Assistant Lecturer and Demonstrator in Anatomy. Stipend £120 per annum. Also temporary Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Registrar, University College, Cardiff.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £80 per annum, with first-class rations, apartments, &c. Applications to the Union Clerk, Brougham-terrace, West Derby-road, Liverpool.

WESTON-SUPER-MARE HOSPITAL AND DISPENSARY.—Medical Officer to the Provident Dispensary attached to the hospital. Salary £80 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BRUCE.—On July 24th, at Goole, Yorks, the wife of R. C. Bruce, M.B. Edin., of a son.

GUBBIN.—On July 11th, at New Brompton, Chatham, the wife of Surgeon-Major G. F. Gubbin, Royal Army Medical Corps, of a son.

KEOGH.—On July 23rd, at Oxford-gardens, North Kensington, the wife of Frederick E. Keogh, L.S.A., of a son.

POWELL.—On July 21st, at Morning-lane, Hackney, the wife of Henry Christoffers Powell, L.S.A., of a son.

MARRIAGES.

BATTERSBY—AYRE.—On July 20th, at St. Nicholas Church, Withernsea, by the Rev. J. G. Patrick, Vicar of Owthorne, assisted by the Rev. C. Day, Vicar of Withernsea, and the Rev. F. Weston, Vicar of Balby, John Hargreaves Battersby, M.D., of Balby, Doncaster, second son of the late Richard Battersby, of Heywood, Lancashire, to Lily Rachael, elder daughter of H. H. Ayre, of Withernsea, East Yorkshire.

BOWIE—CHICHELE PLOWDEN.—On July 20th, at Christ Church, Lancaster-gate, Alex. Bowie, M.D., C.M. St. And., L.R.C.P. Edin., of Hertford-street, Mayfair, to Henrietta A., only daughter of the late Captain H. Chichele Plowden, Bengal Staff Corps.

CRAWFURD—BAILEY.—On July 22nd, at Harwood Parish Church, Bolton-le-Moors, Raymond Henry Payne Crawfurd, M.A., M.D. Oxon., M.R.C.P. Lond., of Wimpole-street, W., to Ethelberta Ormrod, youngest daughter of Arthur Bailey, Esq., of Brightmet-hill, Bolton-le-Moors.

DALBY—JEX.—On July 25th, at St. Paul's, Brighton, by the Rev. J. H. Ashley Gibson, M.A., John Lyttleton, of Norfolk House, 13, Buckingham-road, Brighton, only son of Major N. B. Dalby, of Ealing, to Mary, daughter of Mrs. B. Jex, of 44, First Avenue, Hove, late of British Honduras. No cards. At home Oct. 1st and 8th, 4 to 6.

MAHOOD—SCOTT.—On July 6th, at Northam Church, Allan Edward Mahood, M.B., F.R.C.S., of Odun House, Appledore, to Caroline Eva Stanley, eldest daughter of the late Lieut.-Col. Stanley Scott, Bombay Staff Corps, formerly of Northam House, Northam, North Devon.

MUIR—PERKS.—On July 21st, at St. James's Church, Kidbrook, Arthur Muir, M.B., B.C., of Enfield, to Francis Annie (Dolly), only daughter of John B. Perks, of Blackheath.

DEATHS.

GARLIKE.—On July 19th, at Malvern Cottage, Ealing Dean, Ealing, Thomas William Garlike, F.R.C.S., aged 82 years.

JOHNSTON.—On July 24th, at his residence, Edendariff, Cheltenham, Surgeon-General William Johnston, M.D., late Madras Army, aged 81 years.

MORRISSON.—On July 23rd, at Hollier's-hill, Bexhill, Sussex, Stammers-Morrisson, L.R.C.P. Lond., M.R.C.S., late of Clapham-common, aged 56 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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"THE TREATMENT OF SEA-SICKNESS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of June 25th a correspondent about to sail as surgeon to a passenger steamer begs for advice as regards medicines for sea-sickness. Moreover, he states that the majority of the text-books are silent on the subject. During the last twenty years I have myself made about forty short voyages and have been often applied to by patients in search of a remedy for this distressing complaint. Also I have taken many opportunities of consulting ship surgeons as to the best treatment, but although they are always charming men and sometimes of great professional skill they are openly bored by the subject of sea-sickness. Prior to 1892 the drug which seemed to be most useful to sufferers was bromide of potassium or sodium with or without hydrobromic acid, but to produce a satisfactory effect the patient had to take doses sufficiently large to produce unpleasant mental effects. I have seen patients arriving in Cairo and remaining ill for several days from severe bromism. I believe that the patent remedies sold in England and America contain bromides as their chief ingredient. When, therefore, I read in THE LANCET of March 5th, 1892, Professor Charteris's praise of a mixture of bromide and chloralamid I at once felt that here was a combination which might act better than bromide alone. Since then this mixture, chlorobrom, has been often praised and seldom abused in the pages of THE LANCET—as, for example, in the issues of June 24th, 1893 (Dr. Ledingham), and Jan. 19th, 1895. I have tried it now on many patients and can on the whole praise it as the best known drug. I began by prescribing it to twelve people, each of whom had made many journeys and had invariably suffered from very severe sea-sickness, sometimes incapacitating them for a couple of days after landing. Some of these also suffered from train-sickness and some used as children to vomit when driven in carriages. This severe test answered on the whole fairly well and I bound each of the twelve over to write and tell me the result. Eight were surprised to find that they did not vomit, wrote grateful letters, and wanted to know if they might give it indiscriminately to all their friends. Two reported well, but said the sea was so smooth that the test was not a fair one; and two others wrote to say that it failed entirely though they had carried out all my instructions. I ought to say that most of my test cases were ladies between twenty-five and fifty-four years of age. Even in cases where the chlorobrom fails to prevent nausea and vomiting the patients are grateful for the sleep which it produces. One of my early cases, a young man with dangerous symptoms, took too much of the drug and wrote afterwards: "Although for the first 2½ days we were on board we had awfully rough weather I never experienced the faintest symptoms of sea-sickness, so that the medicine was entirely successful in that respect. On the other hand it reduced me to such a deplorable state of drowsiness and (as my friends said) apparent intoxication that at the end of 2½ days they induced me to give it up fearing that it was having too much effect on my head. Altogether I was most thankful for the medicine, &c." This, so far as I know, is the only bad result of the remedy. I began by prescribing wafers of bromide and chloralamid in equal parts, but a solution is obviously easier to take and to those abroad who cannot get the liquid chlorobrom sold in England I would point out that a very good imitation can be made by dissolving the chloralamid in rectified spirits. No drug can be guaranteed to prevent sea-sickness, and to give chlorobrom a fair chance aperients must be taken before and during the voyage, diet on board must be sparing and simple, a belt should be worn, and the first dose of chlorobrom must be taken the night before embarking.

I am, Sirs, yours faithfully,

Cairo. F. M. SANDWITH, M.D. Durh.

"INCARCERATION OF THE PENIS."

To the Editors of THE LANCET.

SIRS,—The case mentioned by you in THE LANCET of July 23rd under the care of Dr. Floras reminds me of a somewhat analogous case which came under my notice some years ago. A man consulted me with reference to his penis. The prepuce was retracted and the glans exposed, a condition which had existed for some years. He had tried every means he knew to return the prepuce to its original position over the glans without success, and as he said it had latterly caused him much irritation he wished to know if I could help him surgically. I, however, told him it was a matter of no great importance and that he had better put up with it. Some weeks afterwards he reappeared and said he had overcome the difficulty himself. On examination, I found his penis ornamented with a brass ring. He had drawn the prepuce well forward, and laying it on a block (probably the village butcher's) had transfixed it with a bradawl, afterwards inserting the brass ring; the wound in the prepuce had quite healed, and there the brass ring remained. He was a married man. I never saw him again.

I am, Sirs, your faithfully,

July 26th, 1898. J. G. B.

A MATTER OF TASTE.

To the Editors of THE LANCET.

SIRS,—Will you kindly inform me if it is the correct thing for a Fellow of a College of Surgeons when signing certificates, &c., to add the initials of his college as Eng., Irel., Edin., for it appears that the London men arrogate to themselves the right to sign F.R.C.S. without the addition of "Eng." There appears to be no rule or custom for medical graduates. Thanking you beforehand for an authoritive opinion,

I am, Sirs, yours faithfully,

July 25th, 1898. R. N.

*** It is better in our opinion that diplomates of the various colleges and graduates of the various universities should indicate the source of their distinctions, but to do so is quite optional. A F.R.C.S. Eng. omitting his "Eng." hardly stands convicted of arrogance.—ED. L.

A POINT UNDER THE EMPLOYERS' LIABILITY ACT.

To the Editors of THE LANCET.

SIRS,—An expression of opinion is desirable on the following points anent the operation of the new Employers' Liability Act—viz., power of entry of hospital by the employer's professional representative for the purposes of examination of the injured person, also a definition of the word "examination"—i.e., to what extent it may be permitted or restricted?

I am, Sirs, yours faithfully,

July 18th, 1898. A HOSPITAL SURGEON.

*** So far as the employer's surgeon is concerned there is no right of entry or right of examination either in hospital or in a private house. The examination contemplated by the Act is obviously such examination as is necessary to enable the employer's surgeon to form an opinion upon the questions at issue—e.g., the extent and degree of injury, probable time and degree of recovery, fitness for work of one or another kind, &c. It would be impossible to define all this, and the attempt to do so is unnecessary seeing that there is no obligation upon the patient to submit to it.—ED. L.

OVERLAYING.

To the Editors of THE LANCET.

SIRS,—The question of "overlaying" crops up again and again, and I would like to offer a suggestion which might be more acceptable than the substitution of an "orange-box for a cot." This expedient seldom finds favour in the eyes of the class to which it is so often advised, who always persist in sleeping with their infants. Briefly, a sort of hammock may be made by fastening the ends of a piece of material about 27 in. wide (a sheet folded lengthwise would do) to the centre of the bar at the head and foot of the bed respectively. The dependent part of this hammock should clear the level of the bed by some inches. No pillow is required, so that the additional danger of the child turning over on its face and being suffocated (which might occur in the most well-appointed cot) is avoided, as the single, or even double, fold of material would not prevent respiration. The supply of air would be less contaminated and there would be no danger of falling out of bed.

I am, Sirs, yours faithfully,

O. HALL, L.R.C.P., L.R.C.S. Edin., &c.

Holmside, co. Durham, July 23rd, 1898.

"UNFORTUNATE PUBLICITY."

WE have received a long letter from Dr. J. F. Bullar, in which the following passage occurs:—"Some time ago the inspector of schools for this district asked me to examine the eyesight of the children in the board schools. There are about 16,000, the work was to be unpaid and I thought it judicious to decline; but I explained how I thought the masters might make a preliminary examination that would be useful. I prepared certain forms with instructions for their use and further demonstrated to the masters the manner of using them. It became necessary to print the forms and the inspector of schools kindly undertook to get it done. In due course I received a copy of what you describe as the 'book.' I proposed to share the cost of printing with the inspector but he informed me that he had arranged with Messrs. Cox and Sharland to publish it free of cost, they to have any possible profit that might be made." We believe with difficulty that Dr. Bullar's work would be advertised in the publishers' penny time-table against his will, but Dr. Bullar says that he sees no objection to the advertisement. He says also that the proposition that there are patent objections to anything which advertises the writer in his medical character to a lay public is "bosh." We can give no more space to the matter.

"A QUESTION OF ETHICS."

To the Editors of THE LANCET.

SIRS,—Under the above heading the wording of Mr. Cuffe's recent circular is criticised in THE LANCET of July 16th. As the circular was addressed only to the members of our profession and calls attention to a grievance which I know to be common to many health resorts, as well as in London itself, I do not think Mr. Cuffe's action should be condemned. In giving patients letters of introduction addressed to specialists whose opinions I have been anxious to obtain I have often been annoyed to find that the hotel manager or lodging-house keeper has persuaded them to consult someone else. This has occurred frequently in London, in Brighton, Bath, and Harrogate. I now write direct to the specialist and merely give the address to the patient, telling him at the same time that I have described his case to the doctor whom I wish to consult. This, I think, is all Mr. Cuffe asks his medical friends to do.

I am, Sirs, yours faithfully,

July 25th, 1898. FAIRPLAY.

Perplexed.—We give an opinion on the case as disclosed by "Perplexed." It is not right of X or Y to expect A to work for Y without extra remuneration when he has only been engaged to work for X. The legal side turns on the interpretation of the terms of agreement between A and X, which we do not know, and on which a solicitor should be consulted before action is taken.

Indecipherable.—We shall be pleased to learn the name of a recent correspondent whose interesting letter is dated from the Royal Colonial Institute, but whose signature has baffled all our attempts to decipher it.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (6th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 28th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 22	29·85	S.	0·25	100	71	55	62	67	Hazy
,, 23	29·69	N.W.	0·02	118	77	60	60	64	Cloudy
,, 24	29·99	N.W.	...	115	78	55	56	62	Fine
,, 25	30·06	S.	...	104	75	61	59	63	Hazy
,, 26	30·09	S.E.	...	101	73	63	62	64	Overcast
,, 27	30·05	E.	0·50	116	80	61	60	63	Hazy
,, 28	29·95	S.W.	...	90	71	62	59	63	Overcast

During the week marked copies of the following newspapers have been received: *Eastern Morning News, Alliance News, Hampshire Telegraph, Bradford Mercury, Cambria Daily Leader, Times of India, Pioneer Mail, Architect, Manchester Guardian, Sheffield Telegraph, Builder, Derbyshire Courier, Citizen, Southport Visitor, Walsall Advertiser, Liverpool Daily Post, Isle of Wight Observer, Boston Herald, Western Morning News, Birmingham Gazette, Scotsman, Suffolk Chronicle, Kidderminster Sun, Leeds Mercury, Leicester Post, Sussex Daily News, Warwick Advertiser, Yorkshire Post, Craven Herald, Dundee Advertiser, Wilts Standard, Bristol Mercury, Brighton Gazette, Hereford Mercury, South-Eastern Gazette, Cyclers News, Lancashire Post, Vectis, Sketch, Linlithgowshire Gazette, Sanitary Record, Science Siftings, Mining Journal, Vegetarian, Hertfordshire Mercury, Reading Mercury, Local Government Chronicle, Stratford-upon-Avon Herald, City Press, Chelsea Mail, Surrey Advertiser, Swanage and Wareham Guardian, The Millom News, Local Government Journal, Australasian Medical Gazette, Weekly Free Press and Aberdeen Herald, Ripon Observer, Morpeth Herald, Rival, Bournemouth Guardian, Devon Gazette, Devizes Gazette, Cornish Telegraph, Leek Times, Ashton-under-Lyne Herald, Whitby Gazette, Malvern Advertiser, Ilfracombe Gazette, Rotherham Express, Southern Times (Weymouth), Christian Commonwealth, &c., &c.*

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Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 8, Rue Traversière, Asnières, Paris.